INSTRUMENTAL TECHNIQUE

FOR

ORCHESTRA *and* BAND

BY

J. E. MADDY *and* T. P. GIDDINGS

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FIFTH EDITION, REVISED AND ENLARGED

INSTRUMENTAL TECHNIQUE

FOR

ORCHESTRA AND BAND

An Exhaustive and Practical Text-book
for Teachers, Conductors and Students

By

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The Willis Graded School Orchestra and Band Series;
The Universal Teacher, etc.

With Appendices on The Dance Orchestra,
The Repairing of Instruments, and
The Marching Band

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PREFACE

THE increasing number of orchestras and bands in the schools is creating a demand for well trained instructors. These teachers are taken from all sources; grade teachers, private teachers, professional players, all contribute their quotas. School bands and orchestras are demanding a new and special type of leader-teacher, one who can teach all the instruments and who can also conduct the ensemble.

This book shows how to develop a technique of teaching that will enable leaders to train their orchestras and bands from the earliest beginnings to the highest point of musical perfection and efficiency in a professionally technical manner, in the shortest possible time and with little or no lost motion. It is a practical treatise on school teaching efficiency applied to the orchestra, band, and all that pertains thereto. The trained leader will find it interesting in checking up on his work. The untrained leader can train himself by following the suggestions closely. Universities and Conservatories will find it a valuable textbook for training instrumental supervisors. The city supervisor of music can place a copy in the hands of his assistants both trained and untrained. The musical grade teacher, suddenly confronted with the task of running an orchestra, will find it a great help. The county supervisor may use it to help develop orchestras and bands in village and rural schools. Community band and orchestra leaders will find it helpful.

The devices and plans in this book are pedagogically sound and musically effective. There is not a page of theory in it. It is practical in every detail and successful experience has proven the value of everything stated.

One of the authors plays all the instruments of the band and orchestra, has played five different instruments in various symphony orchestras, is a music supervisor with a number of years' experience, and is a composer and arranger of band and orchestra music. He is also an orchestra conductor. While at Richmond, Indiana, he developed a high school symphony orchestra of eighty-six pieces which appeared at two national supervisors' conferences. He made a most successful appearance as guest conductor with the Los Angeles Philharmonic Orchestra at the Hollywood Bowl during the summer of 1924.

The other author is a supervisor of long experience who has written several works on public school music and has hundreds of instrumental classes and over a hundred bands and orchestras under his supervision.

Accompanying this volume is a book of technical exercises for each instrument of the band and orchestra which the students should purchase. The exercises and instructions as to their use are also contained in this book so that the teacher may train his players technically as well as musically. These students' books are small enough to go into the instrument cases.

The authors and publishers gratefully acknowledge the services of Mr. G. Ackley Brower of New York for editing the musical examples, assisting with the proofs, and compiling the Index.

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INSTRUMENTAL TECHNIQUE

FOR

ORCHESTRA AND BAND

PART ONE:

SUBJECTS COMMON TO BOTH ORCHESTRA AND BAND

CHAPTER I

§1. The Elements of Music

MUSIC is a "concourse of sweet sounds"—so sings the poet. Whatever the medium by which it is made, this should be true.

There are three elements or factors in music: Rhythm, Melody, Harmony. Rhythm developed first. Everyone is able to hear and enjoy rhythm. Rhythm is the principal ingredient in the music of savage and undeveloped races. Melody developed next. Most people are able to hear and appreciate melody. Harmony, the noblest part of music, developed last. Comparatively few hear harmony except as a blur accompanying rhythm and melody. These few hear music in a normal proportion like this:

RHYTHM MELODY HARMONY

this proportion varying with the type of music heard. To a large proportion of listeners music appears as follows:

RHYTHM MELODY HARMONY

This explains the popularity of the ultra-rhythmic type of music called "jazz," as the three elements of music appear in jazz about as above. As this is the proportion of music as it sounds to ninety-nine out of every hundred people it is at once clear why jazz is so universally popular.

§2. Object of Teaching Music

The function of the music teacher is to raise a generation of people who can *hear*, *enjoy* and *make* music. When this is accomplished there will be no difficulty in filling the concert halls with enthusiastic supporters of music in its highest forms. The principal reason why this is not possible now is the almost universal inability of people to hear and appreciate more than the first two elements of music.

There are many other reasons why music should be widely taught but we will confine ourselves to the instrumental side and on that side will speak only of the "all-round" musician who will play in the orchestra or band either as a professional or amateur, or as one who has stopped playing and who enjoys listening to the playing of others.

§3. The All-Round Musician

With the above in mind how shall we train the young musician to hear and enjoy music in the proper proportions? Experience shows that the average musician, as well as the average person, is weak on harmony. He has plenty of rhythm—too much, usually, to balance the harmony he picks up. Melody he has in plenty, there remains but to teach him more harmony and teach it earlier and stress the rhythm less than has been done.

Very closely connected with this is the way people hear music. It takes the ear an appreciable time to hear and classify several sounds at once, so young pupils who are just beginning to play some instrument should do ensemble work a great deal from the very beginning in order that their ears may become accustomed to harmonies. This necessitates using a different type of music for beginners than has hitherto been available; music that is rich in harmony, slow and simple as to rhythm and melody, with frequent holds and long chords.

§4. What Kind of Music do They Like?

It has long been thought that young people like the quick, rhythmic type of music best and this belief has given rise to the lively songs for kindergartens and lower grades and the rhythmic marches with lots of "pep" and thin harmony that go to make up the music of most of the simple selections available for beginners' orchestras and bands. The fact of the matter is that young people become fascinated with the harmonic content of music very early and while they still enjoy the "peppy" kind their greatest enjoyment comes from the rich harmonies they make and hear. The richer these are and the earlier they are played the better the chance for developing the all-round musician.

CHAPTER II

§5. The Ideal of the Leader

"A STREAM rises no higher than its source"—so runs the old principle of physics, but, the stream can be made to rise just as high as its source. So with the orchestra and band. It can become just as fine and play just as fine music as is its leader's ideal of what is possible. One high school leader will develop a jazz band and never get any further. That is the extent of his ideal. Another will have a small dance orchestra. That is as far as his vision carries him. Another will develop a well-balanced symphony orchestra in a high school of eight hundred pupils.

It is all in the vision and ideal of the leader. Young people can do anything if properly led by a person with high ideals. The leader who has these ideals and sticks to them will win out in the long run, for he will work out a way to do it and carry his pupils with him. We are just on the verge of a tremendous development of the instrumental side of music in the schools, and teachers and leaders are needed with high ideals and the technical training to "carry on" until their ideals are reached. There are plenty of people in the musical field who know music but there are all too few who even dream of the perfection school music may reach, and fewer still who have the backbone to stick to their ideals and develop the teaching skill necessary to enable their pupils to reach their ideals.

§6. Where Shall Leaders be Found?

The development of the instrumental side of school music demands training for a new and difficult profession. Musicians there are in plenty who know one or two instruments, but to be supremely successful in this work one must know them all. Then again there are musicians who do know instruments and music well, but who do not know children and how to handle them *en masse*, in short who cannot teach school, and who consequently cannot "put over" what they know. Being unable to do this, they have no adequate idea of the possibilities of school music.

Teachers there are in plenty who can teach school, who can handle pupils and get them to work enthusiastically and well, but these fine teachers are apt to lack musicianship and so be unable to carry their pupils far on the road to musical success. It sounds as though it required an unusual combination to be a successful teacher of instrumental music. It does. The best ones are those who are teachers first. It is easier for a teacher to learn music than it is for the musician to learn to teach school. The perfect teacher will be both musician and teacher in the right proportion and will shape his studies accordingly.

The leader must be a disciplinarian; one who is able to rule tactfully without too much show of driving. He must be a teacher of the most ingenious variety and also have great force and endurance, both mental and physical. He must have perfect self-control, the right attitude toward his subject and see it from the big, human, educational side, as well as from the musical side. He must have infinite patience, firmness, and an intense love for young people.

§7. Music as a Mind Trainer

A pupil goes to school to learn to use his brain on the problems of life. To both teacher and pupil the lesson of the day is too often the end instead of the means of mental training. The importance of the lesson itself should be kept before the student, but since the *way* he gets it is still more important, that should be impressed upon him constantly. If pupils had a clear idea of what they come to school for, they would become more interested in watching their own mental development and consequently would have a desire to remain in school longer.

The music teacher is vitally interested in making the pupils quick-minded, for without this mental alertness on the part of pupils the music teacher is helpless. Music is especially adapted to cultivating mental alertness. For this purpose no subject in the school curriculum is superior. It is the business of the music teacher to make this clear to the pupils. The leader will have to show mental speed and alertness himself, or his preachings will be of little avail. This is why no slow-thinking or slow-speaking person should go into music supervision.

Many teachers believe that, in training the mind, accuracy instead of speed should be the first consideration. This is wrong. The pupil should be trained in speed first. Accuracy first is peculiarly fatal to good work in music. In music, time is of first importance, and a teacher who allows a child to hesitate over a note is not only spoiling the music but is allowing the pupil to grow up with halting, timid mental habits.

The pupil should grow up with the same fearlessness toward mistakes in music that he has about throwing a ball and missing the mark. He should feel that it is his privilege to make all the mistakes necessary to get the music right in the end. He must learn to start at the beginning of a piece and play to the end without faltering in his time, no matter how many wrong tones he plays. With this mental habit as a foundation the rest is easy, because the fearless mind will finally become far more swift and accurate than the timid one.

§8. The Over-Sensitive Musician

The musician who plays well and who has a sensitive ear is often a failure as a teacher. The reason is to be found in the preceding paragraph. The over-sensitive musician is not able to endure discords; consequently, when he hears one he squirms and suffers audibly until the pupils acquire the teacher's sensitiveness and are afraid to play anything for fear of making mistakes. The spirit of the army, which makes the soldiers advance in the face of the enemy, should prevail in the music

lesson. Of course one must have a good ear and be a good musician before he can be a good music teacher, but a music teacher should not allow his musical temperament to run away with him.

§9. Set Up a High Ideal

The leader should expect a great deal from his pupils. He should impress upon them at the outset that music study means business, and that from it they will receive a training that is well worth while. If there is anything that pupils will take advantage of and at the same time despise, it is an easy subject or a teacher who lets them do as they please and waste their time. They admire, though they may complain bitterly of the teacher who makes them toe the mark and get something done. If properly led and inspired, pupils like to do, and will do, the big, difficult things. It is, therefore, the problem and the joy of the leader to arouse pupils to such efforts.

The work will not go well if this feeling on the part of the pupils is impersonal. The right attitude toward the work must be shown by the pupils individually. Since sermons of all kinds are usually passed on to the other fellow, it is a poor plan to correct the class as a whole. Whenever a correction is made, it should be made kindly and personally. If something is wrong, ask some one person if he is responsible. This will bring the matter home to the individual and make him think as an individual.

CHAPTER III

§10. The Scope of Instrumental Music

THE development of instrumental music in the schools in the last few years has been remarkable but it is still in its infancy. Vocal music for everyone is the best possible foundation for all music work, but vocal music is necessarily limited in scope, and if the pupil is to become a well-rounded musician he must turn to some instrument as a medium of expression. Even the finest singer uses some instrument as a means to further his musicianship. This explains the almost universal use of the piano. But the piano has very definite limitations and shortcomings, and people who wish a higher and more perfect form of musical expression are turning more and more to orchestras and bands. This yearning for higher and more perfect musical expression may be partially latent and indefinite in young pupils but it is united with another and very definite force that keeps many young people practising vigorously on some orchestra or band instrument rather than on the piano. The piano is solitary. The band or orchestra is a social instrument; young people are gregarious and it is at the time of the development of the "gang spirit" that the band or orchestra player usually begins to learn his instrument. It works for good as it starts the extra-musical child on the road to the highest forms of musical expression, the band or orchestra. The band is mentioned first as it is the more attractive to young players. Properly developed it is a wonderful medium for musical expression and in time will rival the orchestra. The expense of private lessons and the time it took for the pupil to play well enough to enter an orchestra or band partially accounts for the late development of instrumental music in the schools.

§11. The Value of Instrumental Music

A most potent reason for instrumental music in the schools is its value as an outlet for spare time energy. A child who plays some instrument of the band or orchestra is so busy that he has little time to waste on things he shouldn't be doing. The band and orchestra rank very high in educational value. This and other values of instrumental ensembles are most ably discussed in *Building the School Orchestra*, by R. N. Carr, and need not be repeated here.

§12. Sight Reading

This is one of the most important things which a musician should be able to do. No one can be a musician of any kind and be unable to

read music rapidly and accurately at sight. This part of a student's training is often neglected, but it should be stressed very strongly in orchestra and band work. Not only must he be an expert reader of printed music but also of manuscript. A professional player is often called upon to play, at sight, marks on paper that bear more resemblance to the tracks left by epileptic chickens than by the pen of a musician.

Reading music means not only reading the notes, but reading the phrasing, expression marks, giving a good tone and balancing one's own performance with all the other members of the orchestra to make a perfect ensemble the first time the music is played. This is a very high ideal and one that is seldom reached, but it should be the one held constantly in mind by both teacher and pupil.

The more nearly this is approached the better the musicianship of all concerned. The better the ensemble the better the chances of success for the individual pupils. A large part of every rehearsal should be taken up with playing new music. This should be played but once and then laid aside and not played again until the pupils have forgotten it. The music selected should of course be suited to the ability of the group. This plan requires a large library of music, but where the successful education of students is at stake, expense should not count.

§13. Analysis of Music Reading

Granted the importance of reading music, let us analyze the processes. We find four of these that the pupil must carry on simultaneously. If he can carry them on in the right proportion he is a perfect sight-reader. This ability should be sought for all along the line, and the closer we come to selecting music that makes this possible the more nearly perfect the ensemble will be. The four processes are: (1) the production of TONE; (2) playing in TIME; (3) accurate reading of NOTES; (4) attention to EXPRESSION.

If a player can carry on only one of these processes the first time he goes through a piece it must be (1) TONE PRODUCTION. This means making a smooth tone that is not disturbed by anything else that he is trying to do.

If he can carry on but two processes at the same time, they must be the first two: TONE and TIME. This means that at the first reading he uses a perfect tone in the time the piece requires, regardless of the number of mistakes he makes in the notes.

If he can carry on three processes they must be: TONE, TIME, NOTES. This means that in addition to the first two he adds the correct pitches of the notes called for in the music.

If he can carry on all four simultaneously, the fourth will be the crowning glory of music: EXPRESSION. Without this all the others are but as sounding brass and tinkling cymbals. But expression without the others is but a nightmare and a delusion.

There must be a definite plan to teach sight reading in the easiest and most efficient way. The foundation of the plan must be a firm

belief on the part of the leader that sight reading is vitally necessary. There must also be plenty of material to carry out any plan of sight reading. It is important to have good material, of course. It is just as important to have enough of it arranged in a usable way.

CHAPTER IV

§14. Credits

CREDITS should be given pupils who play in the band or orchestra if their work is worth it. If they merely play occasionally for the fun of the thing they should receive no credit. Music should not be looked upon as a snap; the music credits that are given in the schools should be earned. Since music is all too apt to be looked upon as a fad by pupils, public, and educators, the credits that music students receive should be convincingly hard to get. Various systems are in vogue in different schools.

The Minneapolis System

Any high school pupil playing any orchestral or band instrument may play in the orchestra or band, having this count as one of his regular studies. Members of the orchestra or band must (1) take one thirty-minute lesson weekly from some approved private instructor for the thirty-eight weeks of the school year; (2) attend five one-hour rehearsals weekly; (3) practise seven hours or more weekly; (4) when requested, play at any entertainment sponsored by the school authorities. Two credits are given for one year's work, eight credits for four year's work. Pupils doing all the foregoing work except taking the private lessons are given one credit for one year's work. No credits are given pupils who study an instrument but do not play in the orchestra or band. A place is found in some ensemble for all who wish to study.

The Richmond System

Players must (1) take one thirty-minute lesson per week; (2) practise six hours per week outside of school; (3) attend five one-hour orchestra rehearsals per week, held during school hours, handing in practice records signed by parent and teacher. They receive a full credit per semester. They must also play at all school functions and engagements decided upon by the orchestra by majority vote, or send an acceptable substitute who must attend a sufficient number of rehearsals to enable him to serve as well as the student excused.

The Ann Arbor System

Players must (1) attend five one-hour rehearsals per week; (2) take one thirty-minute private lesson per week; (3) practise six hours per week, and serve with the orchestra on all occasions decided upon, or send

acceptable substitute, receiving one credit per semester. As an alternative to the foregoing, they may attend five one-hour rehearsals per week and practise enough to keep up with the orchestra without taking the required lessons and doing the required six hours of practice per week, and receive one-half credit per semester.

Credits in some form should also be given in the grade and junior high schools. For further discussion of music credits the reader is referred to Bulletin Number Two, published by the Music Supervisors National Conference.

There are two reasons for requiring all instrumentalists to play in the orchestra or band. In the first place, ensemble playing is a necessary part of an instrumentalist's education; in the second, he should use his talents for the common good and help pay for his training.

§15. Rehearsal Time

It is often a problem to induce school authorities to admit that the study of music is education and to give time for it without allowing other things to crowd it out. When this is admitted and there is a teacher available who can teach instrumental classes, bands, and orchestras, the rest is but a matter of time, work, and careful planning.

All these ensembles should meet in school time, have a specified number of periods weekly, and be an integral part of the school work. When pupils are allowed to substitute music for other and less useful subjects, the work will amount to something, for let it be known that more people earn their living by music than by any other profession except three, and when one includes those who partly earn their living by music the number probably stands near the head. Most of these earn money on the instrumental side and the number is increasing every day. This is only the vocational side. When the other, the educational, general musical, ethical and entertainment sides of music are taken into account, the thinking person will soon see that it takes a very useful subject indeed to hold its own with instrumental music in the schools.

Once or twice weekly is about all that can be asked for the instrumental classes of all ages and possibly for the orchestras below the Junior High School, but daily periods for these would be far better. The bands and orchestras of the Junior and Senior High Schools should meet every day for one period.

If the ensemble is efficiently organized an amazing amount of work can be accomplished in a forty-minute daily rehearsal. The best time for rehearsals is in the middle of the day. Any school can arrange a program that will permit daily rehearsals if the principal is so inclined. Practically every high school has duplicate classes in some subjects. If every class which meets at the same time as the band or orchestra has a duplicate at some other period the difficulty is solved. It is far better, as well as easier, to arrange to have a period every day than a double period two or three times a week, as the daily class always functions better than the intermittent class. After-school rehearsals are never satisfactory although they are sometimes possible in grade schools.

It is obviously unfair to penalize music students with after-school classes when other vocational subjects are taught during school hours. Since professional musicians are better paid than any of the other vocations taught in the schools, a fair-minded school management will not refuse school hours and equal credits for music work if properly approached and if sufficient guarantee is given by the music supervisor that the work will be of adequate educational value for the time spent.

§16. Motive

Good teaching is good teaching wherever found, and whatever the medium used. Nowhere is it more essential than in the instrumental department of the schools. One of the most important phases of the teachers' work is to find a motive strong enough to carry pupils through the numberless hours of hard work that the instrumental musician must undergo. The music he makes is of course the greatest motive and the better this is the stronger the appeal it will make. The wise teacher plans that this shall be constantly at work. Where the motive is strong enough all the rest is easy. There are many other motives that are compelling, and it is perfectly proper for the teacher to appeal to them.

Competition in the class lesson and in the band and orchestra is a powerful motive at all stages. It may take the form of back seats for the best and front seats for the poorest in the instrumental classes (see Chapter XIII, §93), the same as in the singing class; this to be determined by the individual playing of the pupils. In the band or orchestra at all stages the "tryout" for place (described in Chapter XIII, §96) should be used regularly.

§17. Playing in Public

Music has many sides and one very important one is playing for other people. Appearing in public is one of the very strongest incentives to hard work. When the question of groups of children appearing in public arises, two sides naturally present themselves: the effect on the child, and the appreciation of the public.

The public is naturally interested in the progress of its youth, and so listens in a pleased manner to their efforts. There is no question that the product of school instrumental ensembles often falls short of being beautiful music, but the public should not be too critical and should endure a lot of discords, attend in large numbers, and applaud vigorously for the good of the cause.

When pupils have worked hard to acquire some musical skill they should have the chance to play before an audience even when they are not very far advanced, and the public should respond. So let them play in public whenever possible. The very fact that certain pieces are to be played before an audience makes those pieces of more importance and they are more eagerly and carefully studied.

Every band and orchestra in the school should have a repertoire, and be ready to play at a moment's notice at any school function. The music department in both the vocal and instrumental sides should not

only give many entertainments of its own but should assist at all others. An entertainment of any kind is hardly complete without music and the music department should welcome the opportunities to play in public that these various programs give.

Many schools have the pupils march out and in. Here is a fine chance for ensembles of various kinds to play.

Pupils should be encouraged to form themselves into various smaller ensembles under student leadership and rehearse together for fun and play in public whenever opportunity offers. Small groups may play in the lunch rooms in the junior and senior high schools.[1]

Every pupil wants to get ahead as rapidly as possible. Let pupils lead the ensembles from time to time. This is most interesting to all and is a valuable training for the student. It sometimes is a valuable training for the teacher as well. These pupils often teach wonderfully well, as they seem to know just what the others need and administer it in no uncertain terms. They often imitate the teacher's weaknesses so that the teacher may profit thereby.

§18. Discipline

This is the most important subject the teacher has to deal with. With it wonders can be accomplished. Without it, nothing. The discipline of the captain of a military company is mild compared to that exacted by the successful band or orchestra leader. The latter must have by far the more perfect response or the music will be poor. The success of the music is in direct proportion to the perfection of the discipline.

The right kind of discipline consists in making the pupils *want* to do their best. "It is easy enough to stand a pupil before you and make him *do* a thing. It is far harder to make him *want* to do it." Thus speaks a revered high school principal. This last is true discipline and nothing else should be tolerated.

The best way to discipline a music ensemble of any sort is to give its members so much to do that there is no time to do anything else. The lesson or rehearsal should be so organized, routined, and programmed that no time is left for foolishness. The material used should be so profuse and interesting and the ideals of the class so high that no interference of any sort is tolerated. The collective opinion of the class on this point should be so strong in the right direction that none dare go against it. All noises not absolutely necessary should be banished from the rehearsal room. In Chapter VIII will be found a number of hints on how to do this.

[1]This is done in many of the Minneapolis schools, the various ensembles taking week about. One young man in an eighth grade has gathered an ensemble of eleven boys in his junior high school and plays engagements Friday and Saturday evenings, occasionally going as far as two hundred miles. This ensemble hires a professional trainer and has regular rehearsals. All of these boys are loyal members of the school organizations. Recently one of them, aged 13, fell in love and could not be depended upon to practise regularly and hard enough. He was summarily dropped by his unfeeling associates and his place filled by a less susceptible gentleman.

§19. Habits

The teacher may form certain habits which will contribute largely to his efficiency and to the results he desires to secure. Briefly enumerated they are: (1) do not repeat statements; let the pupils understand that they must hear the first time. (2) Assume that pupils have common sense. Allow the pupils to develop their reasoning powers. (3) Do not tell students things which they can discover for themselves. (4) Let the motto of the music lesson be—

Less talking; more playing.
Less teaching; more learning.

§20. Efficiency

Teachers are very apt to be careless in selecting what they are to rehearse, and so by meaningless repetition and aimless practicing dissipate their energies and discourage their pupils. Of course, pupils like to play over the music they know, but there is a limit to their fondness for this. They instinctively know whether they are going ahead or simply marking time. In every repetition of an old piece the teacher should be sure to bring out some new perfection or beauty so plainly that every pupil in the ensemble will see that that particular playing was time well spent.

Teachers who have a number of classes or orchestras to teach often forget just what pieces to play, just what they have been playing, and when and how many times, and what points have been perfected at each playing. Every teacher should keep a book that tells him at a glance just when, how, and why every piece has been played. Nothing that the teacher can do will repay the time put into it as this sort of bookkeeping. With its help lessons may be planned so that every second of the rehearsal may be used to advantage. The pupils will soon respond to this and their interest will increase tremendously as they will feel the joy of progressive accomplishment. No incentive is greater than the increasing perfection of the ensemble in a definite, apparent, and progressive way.

§21. Temperament

One of the problems with which the leader often has to contend is the good player who thinks he is a little too good to play for that particular leader or with that particular group. This requires tact. The first thing that the leader must do is to be sure that his players never get the idea that he does not want them; they must be made more welcome to this class than to any other, but on the other hand, for their own sakes as well as that of the leader, they must never get the idea that they are indispensable. This is fatal to discipline in any band or orchestra. Many leaders put up with all kinds of trouble from some particular player because he plays well and the leader needs him.

This attitude is liable to crop up at any time in any ensemble and if, after a heart-to-heart talk between the leader and the uppish pupil,

only give many entertainments of its own but should assist at all others. An entertainment of any kind is hardly complete without music and the music department should welcome the opportunities to play in public that these various programs give.

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The leader should plan to have these pupils play whenever possible, with the good-natured understanding that professional playing comes first. He should gladly use what time the student has left and spend his energies on those who are coming on and need developing. The leader may often use these professional players to fine advantage by asking them to sit in their respective sections and help the poorer players in various ways.

There are often good players who will not condescend to enter the orchestra. They are either training to become soloists, their teachers do not want them to do ensemble work, or for various reasons they think that orchestra playing is beneath them. The leader should interview the player, his parents, and teacher, and frequently this false attitude on the part of the student can be changed. These players should not be allowed to appear on school programs, nor should they be given credit for their music unless they play in the school ensemble.

However, nothing succeeds like success, and the leader should never spend his time or energy teasing these into his orchestra or band. Let him spend it in raising the standard of the ensemble, and when this has risen to where it should be there will be no trouble in attracting and keeping these fine players.

CHAPTER V

§23. Class Instruction

A FEW years ago a certain instrumental supervisor purchased twelve violas and arranged with a teacher for private lessons for the twelve children to whom the violas were loaned. Saturday each child came eagerly in turn to the private teacher. During the lesson each one confided to this teacher the hope of playing in the orchestra very soon. "You will not be ready to play in an orchestra for two years" was the disheartening reply. Monday morning twelve pupils waited on their respective principals and said, "Here's your viola. I *wanted* to play in the orchestra." In desperation the supervisor gathered these twelve would-be viola players into one class and taught them herself and placed them in orchestras within a few weeks. Then they were willing to work, for the goal, ensemble playing, was reached.

Now that class teaching of the different instruments has begun and is being carried on so cheaply, rapidly, and successfully, we may look for a wonderful expansion of public school music on the instrumental side, for the time is rapidly coming and is already here in places, when all instrumental teaching will be carried on in classes at all stages, and these classes will be in the form of bands and orchestras after the first few weeks, and the pupil will be able to develop his musicianship in congenial company as he now gets his general education, instead of the solitary confinement of the private lesson.[1]

§24. Melody *vs.* Technique

In the early stages of instrumental work tunes should be played almost exclusively. Although music is the goal for all and should be constantly striven for, the technical side must not be slighted. Accompanying this manual is a small book of technical exercises for each instrument that should be used with all instrumental classes, bands and orchestras, but the teacher must be very careful how, when, where, and why they are used.

§25. The Use of Exercises

Technical exercises in music are short cuts to artistry. A technical exercise stresses some certain problem until the student becomes expert in its use. He can then use that particular skill to make music. A technical exercise is *not* a short cut to artistry unless the student *sees*

[1]Complete instructions on how to organize and carry on class lessons in all band and orchestra instruments will be found in *Building the School Orchestra*, by Raymond N. Carr. Ample, well-graded and interesting material for the work will be found in the *Universal Teacher*, by J. E. Maddy and T. P. Giddings. These are both published by The Willis Music Co.

that it is going to give him some coveted power in the shortest possible time. When he needs it for what he wants he will take it and work at it gallantly. The above explains why so many students do not practise their music lessons. The "technical" is too prominent and "music" too far away.

These books of technical exercises for each instrument are to be used in connection with the weekly or monthly tryouts for positions in the ensemble. The leader assigns the passages to be tried. Also he suggests the exercises that will help. The student takes the book home and works on the exercises. When he sees that practising these exercises advances him in the class, band or orchestra, and makes his playing more artistic with less expenditure of time and effort he will practise them willingly.

§26. Rhythm

Rhythm, or time, and its teaching is one of the difficult problems in the study of music. A very potent reason is that many teachers and pupils have a wrong idea as to its nature and place in the scheme of education. Rhythm is the life of music and rapid rhythmic thinking is the life of the mind as well. Mistaking the problem before us is another reason for trouble in teaching rhythm. As a matter of fact, we do not have to teach rhythm in the schools very much or very often, though much time is wasted in trying to do it. This is especially true in the band and orchestra and the instrumental classes. The pupils already know rhythm in plenty; the problem is to teach them to *read* it. We know that pupils must read pitches with the eye. We do not seem to realize that they must also read rhythm with the eye. It is so easy to read it by ear that pupils and teachers are not always clear on this point.

Another reason for poor reading of rhythm will be disclosed by a glance at the logical sequence of "reading music" (§13). Teacher and pupil should always remember that time comes second, and no matter what notes are played the time must be kept up in just the speed they are using. When pupils in the instrumental ensembles are taken from singing classes where the time of the vocal music is read with the eye instead of the ear, the time part of the music will present little difficulty.

When a selection is played for the first time the teacher is very apt to set the tempo for the pupils by counting, stamping the foot or beating time in some other way. This should never be done. When it is done the reading of the piece may sound better the first time but it is not "pieces," but *power* we are seeking, and it is the power to read the rhythm the first time the piece is looked at that the pupils are trying to develop. Whenever the teacher "helps" in this manner he is hindering instead.

§27. How to Begin a New Selection

Let us suppose the class is an orchestra of thirty pieces, with a pretty wide instrumentation. The piece they are to play begins with all the instruments at once. The teacher should simply say "play" or better yet, tap twice (see Chapter VII, §41). If the pupils have the proper

reading habits and the piece is suited to their ability, the piece will be played correctly the first time. This does not always happen, but new pieces should *always* be tried first in this way.

There are several reasons for this. Give the pupils a chance to show what they can do unaided. The joy of new music well played is a fine motive, the joy of accomplishment is an even greater one. The story of the child with his nurse on the beach should be remembered by all teachers at all times, but the instrumental leader needs it especially. It was time to go home. The child did not want to go home, his pail was but half full of sand. The nurse took the shovel and filled it. The child sat down and cried. He didn't want the *full pail.* He wanted the fun of *filling it.* Then he could have both the full pail and the joy of accomplishment.

The first playing will give the pupils a chance to show the teacher just what habits are formed and just what habits are wrong and just what habits he must set about forming so that the next selection is better read as to time.

It will be well to give the pupils a second and a third trial. If this does not give a perfect performance as to time, the teacher should then analyze *with the class* the various troubles. This is often done before the piece is tried at all, but this is poor pedagogy. It destroys all the joy stated above, leaves nothing for the pupil to do for himself, and is one of the principal reasons for failure in school teaching in all lines; and instrumental music teaching is nothing but school teaching in its most fascinating phase.

§28. Hearing Rhythm

If, after the third trial, the pupils have not succeeded in playing together, or in other words, they do not hear each other's time, the teacher may ask them to "set their time." This means that all shall count aloud and keep at it until all are counting at exactly the same speed with the natural accents somewhat prominent. When pupils do not play or count together, it means that they need ear training in rhythm. Teachers often forget that pupils must develop an ear for rhythm as well as an ear for pitch, and that being able to hear others well enough to keep exactly together in ensemble playing is often more difficult than keeping together in pitch and that this ability must be developed early. This explains why the teacher should *never* set the time on a new piece nor beat time either visibly or audibly, nor allow anyone else to do so the first few times a selection is played. This applies to younger organizations. Later the leader may conduct on new selections when the pupils have developed the ability to hear each other in rhythm as well as pitch.

To return to the work. When the pupils have counted several measures the teacher should stop them and let them try again, telling them to remember just how fast they were going, to keep counting mentally and to keep together perfectly by listening to all the other players as well as counting their own time. They will soon develop what might

be called a "normal speed" and a feeling for rhythm that will enable them to start any new piece without preliminary counting and keep together perfectly. If the teacher wishes the time to be varied he may simply say "faster," or "slower," and they will respond as one instrument.

This counting will also show whether or not the pupil sees his measures clearly. It is a constant surprise to every experienced and observant teacher how many things pupils can look at and not see. The bar-lines that separate measures are often quite invisible to players who play fairly well. Another amazing fact is the number of players who read either wholly or partly by ear and "get by" with it. The most musical children often fall into this class and the teacher must recognize this and train them to see and translate every mark on the page.

§29. Measures

Several devices may be used to make sure that the players see the measures clearly. Have them point out a few measures, pointing to the bar-lines with one finger of each hand. This will show at once whether they see the measures or not. To find whether or not they think the measures clearly, let them play through the piece, playing the first beat in each measure and counting silently. If the ensemble can do this perfectly it will show that they have the right habit and are seeing the first beat in each measure in its proper place. If they cannot do this let them do it and count aloud. Let them also do this individually, either counting silently or aloud, or having the class count aloud when the individual player falters in his time. This excellent device, like all others, should be used whenever necessary and laid aside when it has fulfilled its usefulness.

When the teacher is sure that the habit of measure-thinking is well established he may then work out troublesome places, measure by measure. Let it be remembered that all this trouble comes from the eye not functioning. It is not "feeling for rhythm" that is at fault. It is simply that the eye does not see clearly enough to set up that "feeling for rhythm" that we hear so much about. Feeling for rhythm there must be of course, as it is a most important part of the player's equipment, but it must be stimulated wholly by the eye in new music, *not* by the ear.

So, in working out troublesome passages let the pupils play one measure over and over, either as a class or as individuals, and counting aloud or not as indicated. When the measure is conquered, add another, then the phrase may be played as a unit, and that part is finished. If this does not bring the desired result let them try playing one beat at a time either individually or in concert. This will show whether or not they have divided the measure into beats. It will usually clear it up and also teach them to think beats as well as measures.

§30. Intoning Measures

Another plan that is a great help at times is to have the class or individuals play the measure over and over on one tone until the rhythm

is perfect, then at a signal, without losing a beat, play it over and over as written, and then at another signal, without losing a beat, go on with the piece. With this practicing of difficult measures should go a further analysis of the piece such as recurring phrases in other instruments.

Whenever a difficult figure occurs in the different parts, it is well to practise it in unison. Remember that all this drill should come *after* the pupils have tried and failed, and not *before*. Also that this drill should be so thorough that the same troubles will not have to be drilled upon again. Drill is to make the pupils expert in the use of some particular power. The drill should be thorough enough to do this, or the time will be wasted. It requires judgment of the keenest type to know *when*, *why*, *what* and *how much* to drill; also to know when and how much the pupil *will stand* and *profit by*. The pupil must see this very plainly or the time will be wasted.

As a further help the students may be assigned exercises covering particular problems, which will be found in the students' books accompanying this volume.

CHAPTER VI

§31. Instrumental Combinations for Grade and High Schools

WHEN organizing bands and orchestras in any system of schools, all the available instruments should be gathered together and almost any instrumentation will do to start with. It is a good plan, however, to have some standard or balance of instrumentation to work toward, for without proper balance there can be little real music. The better the music the more popular the ensemble and the more the pupils get out of it. The following instrumentation is suggested for bands and orchestras of different grades:

Orchestra for Six-Grade Building:

12 violins (or more).
3 cellos, half size.
2 basses, quarter size.

2 B♭ clarinets.
3 cornets.

2 French horns, mellophones, or E♭ alto horns.

1 trombone.
1 baritone or tenor horn (playing trombone music).

1 bass drum.
1 pair cymbals } one player.
1 triangle }

2 C-melody saxophones or 1 E♭ alto and 1 C-melody saxophone.[1]

No band is suggested for a six-grade building—instrumental classes will take care of the extra wind players and they will be getting ready for the band in the seventh grade.

Orchestra for an Eight-Grade Building:

12 violins (or more).
4 violas.
4 cellos, three-quarter size.
3 basses, half size.

1 flute.
2 or 3 B♭ clarinets.
3 cornets.

2 French horns, mellophones or E♭ altos.

1 trombone.
1 baritone or tenor horn (playing trombone music).
1 E♭ tuba.

1 bass drum.
1 pair cymbals } one player.
1 triangle }
1 snare drum.

2 C-melody saxophones (playing bassoon music).

[1]Saxophones are not necessary, but they are usable. Transfer the other saxophone players to clarinets.

Band for an Eight-Grade Building:

12 B♭ clarinets.
1 E♭ clarinet.
1 piccolo or flute.

1 alto saxophone.
1 tenor saxophone.
1 C-melody saxophone.[1]
1 baritone saxophone.

6 cornets.
3 French horns, mellophones or E♭ altos.
3 trombones or 2 trombones and 1 tenor horn.
1 baritone.
2 E♭ tubas, small upright size.

1 bass drum.
1 or 2 snare drums.
1 pair cymbals.

Junior High School First Orchestra:

24 violins.
8 violas.[2]
6 cellos (2 full size and 4 three-quarter size).
4 basses, half size.

2 flutes.
1 oboe.[3]
1 bassoon.[3]
3 B♭ clarinets.[4]
3 cornets.
3 French horns.[5]
1 trombone.[6]
1 E♭ tuba.

1 pair timpani.[7]
1 bass drum.
1 snare drum.
1 pair cymbals.
1 triangle, castanets, bells, etc.

Junior High School Band:

16 B♭ clarinets.
2 E♭ clarinets.
1 piccolo or flute.
1 oboe.
1 bassoon.

1 alto saxophone.
1 tenor saxophone.
1 baritone saxophone.
3 C-melody saxophones (separate music).[8]

4 cornets.
2 trumpets.
4 French horns, mellophones or E♭ altos or
4 French horns and 4 altos or mellophones.[9]
3 trombones.
2 baritones.
4 E♭ tubas, small upright size.

1 bass drum.
2 snare drums.
1 pair cymbals.

[1]Three may be used if separate music is provided for each one.
[2]If there are not enough violas use more violins.
[3]Transfer clarinet player to school-owned instrument.
[4]No saxophones unless bassoons or horns are missing.
[5]Mellophones and E♭ altos should be discarded for French horns at this stage.
[6]Two may be used if not allowed to overbalance by loud playing.
[7]One player for these and the bass drum as they are not used together.
[8]Do not allow them to play oboe music.
[9]One horn and one alto or mellophone to each part—an excellent way to teach the French horn.

The players in the junior high who are not listed in the above should go into a second orchestra which should be unlimited as to size and instrumentation so as to accommodate all who apply. The first orchestra and band should be recruited from these players.

Senior High School Symphony Orchestra:

20 first violins.
18 second violins.
12 violas.
10 cellos.
10 basses, three-quarter size.[1]

3 flutes, one doubling on piccolo when required.
3 oboes, one doubling on English horn when required.
4 clarinets,[2] one doubling on bass clarinet when required.
3 bassoons.[3]

4 French horns.
4 trumpets or cornets.[4]
3 trombones.
1 tuba (preferably BB♭).

1 harp.[5]
1 pair timpani.
1 bass drum, large size.
1 snare drum.
1 pair cymbals, triangle, castanets, tambourin, bells, xylophone, celeste.[6]

Senior High School Symphonic Band:

2 piccolos, interchangeable with flutes.
2 E♭ clarinets.
24 B♭ clarinets.
2 alto clarinets.
1 bass clarinet.

2 alto saxophones (or 1 soprano and 1 alto).
1 tenor saxophone.
1 baritone saxophone.
1 bass saxophone.

[1] There are more stringed instruments listed than in the usual symphonic ensemble. Young string players cannot play very loudly. Young wind players have difficulty playing softly. To preserve balance more strings are used.

[2] Two firsts and two seconds, one player on each part except in *tutti* passages.

[3] One first and two seconds, one second playing in solo passages.

[4] Two firsts and two seconds, one on each part for solo passages.

[5] Two may be used except in solo passages. The harp is a rare instrument in high school orchestras. The following, taken from the program of the Music Supervisors' National Conference which met in Cincinnati in 1924, tells its own story and suggests a way to remedy the above rarity:

"The Morton High School Harp Ensemble is not strictly a high school organization. Three members are students in the school, one is a teacher, one is a junior high school student, one a working girl and two are grade school students. In January, 1923, the harp was almost an unknown instrument in Richmond. About that time the high school purchased a harp with the proceeds from orchestra concerts. The instrument was placed in a room at the school and students given the privilege of using it for practice. A teacher was imported from Indianapolis one day a week and ten students enrolled in the harp class, each student being assigned the use of the harp for one hour each day. The result was most gratifying, for, within five months six of the students had provided themselves with harps. In May an ensemble of seven harpists took part in the May festival. Harp solos are a part of nearly every community program now and the harp class has become an established part of our school work. Our school orchestras are assured of an adequate supply of harpists for many years to come and many students are preparing for careers as professional harpists, all made possible by the initial expenditure of a few hundred dollars for a school harp. Was the investment worth while?"

[6] It is preferable to have three regular percussion players, as follows: one timpani, doubling bass drum; one snare drum, doubling castanets and tambourin; one cymbal, doubling triangle. Call in a pianist, or borrow a player from some string section who is also a pianist, to play bells, xylophone and celeste, since these instruments are so seldom used. All drummers should be given an opportunity to play timpani part of the time at rehearsals so that each will become an all-round drummer.

Band for an Eight-Grade Building:

12 B♭ clarinets.
1 E♭ clarinet.
1 piccolo or flute.

1 alto saxophone.
1 tenor saxophone.
1 C-melody saxophone.[1]
1 baritone saxophone.

6 cornets.

3 French horns, mellophones or E♭ altos.
3 trombones or 2 trombones and 1 tenor horn.
1 baritone.
2 E♭ tubas, small upright size.

1 bass drum.
1 or 2 snare drums.
1 pair cymbals.

Junior High School First Orchestra:

24 violins.
8 violas.[2]
6 cellos (2 full size and 4 three-quarter size).
4 basses, half size.

2 flutes.
1 oboe.[3]
1 bassoon.[3]
3 B♭ clarinets.[4]

3 cornets.
3 French horns.[5]
1 trombone.[6]
1 E♭ tuba.

1 pair timpani.[7]
1 bass drum.
1 snare drum.
1 pair cymbals.
1 triangle, castanets, bells, etc.

Junior High School Band:

16 B♭ clarinets.
2 E♭ clarinets.
1 piccolo or flute.
1 oboe.
1 bassoon.

1 alto saxophone.
1 tenor saxophone.
1 baritone saxophone.
3 C-melody saxophones (separate music).[8]

4 cornets.
2 trumpets.

4 French horns, mellophones or E♭ altos or
4 French horns and 4 altos or mellophones.[9]
3 trombones.
2 baritones.
4 E♭ tubas, small upright size.

1 bass drum.
2 snare drums.
1 pair cymbals.

[1]Three may be used if separate music is provided for each one.
[2]If there are not enough violas use more violins.
[3]Transfer clarinet player to school-owned instrument.
[4]No saxophones unless bassoons or horns are missing.
[5]Mellophones and E♭ altos should be discarded for French horns at this stage.
[6]Two may be used if not allowed to overbalance by loud playing.
[7]One player for these and the bass drum as they are not used together.
[8]Do not allow them to play oboe music.
[9]One horn and one alto or mellophone to each part—an excellent way to teach the French horn.

An amusing incident once occurred in a junior high school. The principal purchased a set of thirty instruments and started a seventh grade "girls' band," a most praiseworthy thing to do. The leader preferred to use his own way instead of another, more modern, plan. Several weeks elapsed and the principal proudly sent for the music supervisor to come and hear his new girls' band. The supervisor came, and the girls assembled, all but eight of them. To the chagrin of the principal one of the players volunteered the information that the missing eight had left the band. He sent for them and when questioned one of the girls, who had drawn a tuba, said in a somewhat venomous and disappointed tone that the cornets and clarinets "got all the tunes" while she drew only a string of afterbeats, and she hated to practise and the folks at home wanted to hear a few tunes to pay for the noises they had to endure from her. Now who could blame her or her folks?

The supervisor then asked if the disaffected would return to the band if they all had tunes to play. They joyfully assented (the reader has already guessed that these girls all played the lower instruments) and returned to the band. They were then changed to the wind books of the *Universal Teacher* where everyone has as many tunes as anyone else, and all were happy. A few weeks later the tuba player was invited to render a solo with a piano accompaniment at a gathering of friends. Now she proudly carries her huge instrument where she was rather ashamed of it before, and she would not trade it for any other instrument in the band, for she has discovered how important a thing it is to be the firm foundation of a growing musical ensemble; besides, she can play tunes as well as the next one.

The *Universal Teacher* is aiding the popularizing of all instruments but of course it will not do it all, nor at once. Later when bands and orchestras are well established and the values of all instruments are well known, parents will buy the instruments as needed. Now they will not, nor will they for some time to come. So in building up orchestras and bands the less well-known instruments must be furnished by the school.

Another quirk of the young human mind must be taken into consideration in doing this. Children are very timid about doing things others do not do. No school should ever make the mistake of purchasing one instrument of a kind, especially the lower strings. At least two or three should be available at once. Then the player of an unusual instrument will have company. Schools should purchase the violas, cellos and basses, oboes, French horns, bassoons, English horns, tubas, timpani, harp, altos, mellophones, piccolos, baritones, basses, bass and alto clarinets and bass saxophone.

A prominent music supervisor once asked one of the authors if his conscience didn't bother him when he condemned a pupil to the viola. "It bothers me worse to have orchestras with no violas at all," was the reply.

It must be borne in mind that it is possible to train players on cheap stringed instruments, but not on cheap wind instruments. Only the best of these should be purchased, as the others are poorly tuned, hard to

play and are discouraging all around. A great saving can be made by purchasing used instruments of approved makes.

§33. How to Buy Instruments

With the above in mind how shall the instruments be acquired and who shall pay for them?

Orchestras should be established first. They are the hardest and take the longest to develop. If started too soon, the band with its ease of development and rather more flashy attractiveness to young people, may overshadow and hinder the development of the orchestra. The whole instrumental structure must be kept in mind and a proportionate number of wind and string players developed so as to give all an equal chance and to keep the ensembles well balanced.

The Board of Education should be asked to furnish a certain number of instruments as a part of the school equipment, the same as it supplies the equipment for other branches. This part of the music system is very largely vocational. Now contrast the vocational equipment in a high school, the machinery side with the musical side: thousands for the one, and usually nothing for the other. Then contrast the number who use their vocational training in one and the other. Music makes a goodly showing here. Many Boards of Education are already furnishing funds to buy instruments.

Buying instruments is a fine outlet for the energies of Parent-Teacher Associations. Local clubs of all kinds may be interested in this cause. Charitably inclined people will here find a very concrete way to help. Many a talented pupil if given an instrument and a few lessons will soon become self-supporting, wholly or in part.

A few years ago a girl in an eighth grade was loaned one of the school violas. There were no classes for her then, and she was given just five dollars by her parents—they had to scrape hard to raise this—for lessons. She was sent to a teacher who consented to take her for a dollar a lesson. At the end of the five lessons she cast about for means to continue her education. She turned to teaching for an income, and acquired six viola pupils. She charged each pupil forty cents for a weekly lesson. This gave her income enough to pay for her lessons, and a rainy day, which she saw coming in the future, when she went to high school. Fearing that one of the high school violas would not fall to her lot she purchased a $90 viola, paid her savings down on it and the rest at a dollar a week. The next fall she entered the high school orchestra, enlarged her class, raised her prices and helped herself to her entire musical education, and is now earning her living with her viola as a teacher and player. She also has furnished a number of viola players for her end of town. This is the tale of one $15 viola.

Concerts of all kinds may be given and the funds used to buy instruments. This gives an added reason for working in music, but it is a very slow way to raise funds. Vaudeville and minstrel shows, given by students, have value and are popular. Student organizations often help this fund. Tag days among the students also help. Managers of picture

theaters often allow organizations to take over a certain number of performances and share the profits accruing from the increased sale of tickets. Properly carried on, paper sales are a goodly source of income.

All the above efforts serve to raise funds and also to keep students and the public reminded of the importance of developing instrumental work in the schools.

Care should be exercised in buying wind instruments that they are built in low pitch (A 440). Many instruments both old and new are built in high pitch and it usually is impossible to tune them with the low pitch instruments. While it is possible to tune the brass instruments down to low pitch by extending the valve slides as well as the tuning slides the instrument is discouragingly difficult to play in tune when so adjusted.

§34. Loaning Instruments

The parents and pupils should assume the responsibility for the instruments loaned by the school and the following agreement for both parent and pupil to sign is suggested:

.....19....

I ..... hereby acknowledge the receipt, from the Public Schools of .....

Instrument .....

Condition .....

..... Value .....
all of which is entrusted to me upon the following conditions to which I agree and which I pledge myself to keep:

(1) The instrument and the appurtenances are now and permanently the property of the .....Public Schools.

(2) The property described is to remain in my possession only during my membership in, or preparation for membership in, a School Orchestra or Band.

(3) A condition of my receiving this property, to which I subscribe, is that I shall try faithfully to perfect myself in the musical use of the same, by taking private or class lessons once a week during the school year, from some recognized teacher, and that I shall assist in all functions that are undertaken by the orchestra or band, such as rehearsals, chapel exercises, and entertainments that are agreed upon.

(4) I pledge myself to preserve the instrument and all appurtenances described in present condition, at any and all times, and when the term of my stewardship is ended, to return all of said property to the owners in such condition. Such expense as is incurred in the fulfillment of this condition is to be borne by me.

(5) In default of any or all of the provisions of article (4) I shall be responsible financially for an equivalent in money for any damages to the instrument or the destruction or loss of it.

(6) I am enjoined from lending, renting or selling this instrument to anyone whomsoever.

There are no exceptions to this condition except an order from the owners, the .....
..... Public Schools, through its official representative.

(7) My term of membership in the school orchestras, or of preparation for membership in them is dependent upon my fulfillment of all these conditions and my obedience to the rules that are or may be in force governing the said organizations.

To all the foregoing I hereby subscribe and pledge myself.

Student .....

Parent .....

School ..... Address .....

Phone .....

CHAPTER VII

§35. Intonation

CORRECT intonation means singing or playing in tune. Without perfect intonation concerted music is a source of sorrow to listener and performer alike and is a menace to all concerned. Playing or singing out of tune will not permanently injure the aural membranes but pupils who are allowed to do this grow up with low ideals of the beauties of concerted music.

It is very true that beginners are unable to play in tune but this is no reason for not making an early and positive effort to teach them how, in the best and shortest way. Many music supervisors allow their classes to sing out of tune, then lay it to fate that so many of them are earless, make the tuneless ones shut up, waste their time on all sorts of so-called ear training devices, never make a sensible effort to teach their pupils to sing in tune, and omit teaching the one thing that will enable their pupils to make pure harmony, that third and most beautiful part of music.

Let us go back to the beginning. What does it mean to be "in tune"? Musical sounds are vibrations. These vibrations occur with perfect regularity if the tone is steady. For a given pitch the number of vibrations per second is exactly the same no matter what the vibrating body that starts or produces the tone.

§36. First Steps in Ear Training

When two or more tones made by different instruments sound just alike in pitch they are produced by exactly the same number of vibrations per second. This is called a unison. A perfect unison is the first thing a pupil should learn to recognize. Then he is ready to recognize the perfect concord of tones of different pitches properly distant from each other. These are the first and most important steps in ear training, but they are the ones usually left to chance or ignored altogether. The third step is remembering correct distances or intervals. This last, very self-evidently necessary step, is the one that teachers usually drill upon first. It is very important and should be drilled upon a great deal; but without a positive knowledge of the first two steps all the work on distances and intervals will be valueless for it will never be accurate.

With the ability to tell exactly whether tones are in perfect unison or harmony the pupil has a check always at hand to tell whether he has hit the exact distance or interval or not.

There are a number of students who hear unisons and concords and who can gauge distances and who do not have to be taught, except to analyze just how they do it. These are the few who are said to have good "ears," and these are usually told to study music and others are discouraged. Many more can learn to do the same thing and develop a musically accurate ear, if they are trained properly and know just what to listen for when they try to sing or play in tune. In fact those who cannot learn to do so are very few. Indeed it is so very easy to train pupils to sing in tune that nearly every one can be trained to do it if the music is slow and smooth at first. Later, rapid music will be sung perfectly in tune by a very large majority of pupils.

Teaching pupils to play and sing perfectly in tune greatly enhances their liking for music, for when the harmony is perfect they are keenly alive to the beauty of it all and will work all the harder and their musical appreciation will rise far higher. Indeed, perfect intonation (and the ability to hear it) is the real key to music appreciation. Without it that noblest phase of music, harmony, is a sealed book.

For example, every one who has heard the St. Olaf Choir admires their wonderful singing. Wherever they appear they are greeted with crowded houses. Musical and unmusical alike marvel at and revel in the music they make. Why is it? There are a number of elements that go to make up this fine ensemble, but the foundation of all, without which the other elements would count for little, is their perfect intonation. They learn to blend their voices perfectly as to pitch, power and quality. The good musician of any kind does the same. Instead of leaving the perfection of intonation to chance, let us be more definite in our teaching, and teach our pupils at the very beginning just what to listen for and just what to do to make their intonation perfect.

First, get away from the piano as that is never in perfect tune. We will not discuss the reasons. A book on acoustics will tell those. The piano has no place in perfect music and that is why good orchestras and choruses do not use it. The best place to learn to sing or play in tune is in the physics class in high school or college. However valuable a full course in acoustics may be, any teacher of music can, in a very few minutes, show a class of pupils all they need to know about the interference of sound and thus teach them exactly what to listen for.

§37. Interference of Sound

What is interference of sound? Briefly this: let us, for example, sound a tone that has 440 vibrations per second. If the tone is steady it has just that number of vibrations each second. If another tone is sounded with it that has 439 vibrations per second, a curious thing happens. The combination tone will be louder part of each second and will die away once in each second, making a variation in the power of the tone

once in each second. This variation is called the "howl" or "wolf," or "pulsation" or "beat," and several other things. We will call it the "beat" for want of a better term.

Now, if two tones are sounded, one giving 440 vibrations and the other 438 per second, this re-enforcement and dying away, or beat will occur twice each second. The farther apart the tones, the more rapid the beats, and there will be as many each second as the difference in the number of vibrations per second of the two tones.

§38. Beats

The next thing to do is to teach the pupils to hear these beats. An instrument called the "ometer" will do this best, but this instrument is expensive and there are various other good ways of doing it. If the teacher is a piano tuner or knows a little about tuning the piano he may easily teach his pupils to hear beats. To do this, open the front of the piano and stop one of the three wires of a key near the middle of the instrument with a piece of rubber. Then loosen one of the other wires a trifle with the tuning wrench and strike the key. The resulting beats will be very apparent and any one can hear them. As the loosened string is pulled up the beats will become slower and eventually disappear, and the tone given by the two strings will be perfectly smooth when the wire is restored to the exact tension of the other. Listening for this perfect smoothness and absence of beats is the way to tell whether the unison is perfect or not.

If the teacher cannot use a tuning wrench, he may use a piano that is out of tune and, striking one key at a time, find several that produce beats and using these as samples, play them each several times for the class. Two violin players may each hold a slightly different tone on, say the D strings of their violins, gradually bringing them into perfect unison. Two cornet players may do the same thing. Two trombone players are even better as the tones are deeper and the beats easier to recognize.

§39. Learning to Hear Beats

How will the teacher use this? The only thing to do is to teach the pupils to *hear* beats, and then teach them to listen for and *eliminate* them while playing. No matter what the medium used for illustration—and there are many more than the above mentioned—demonstrate very slow beats at first and then tell the class just what to listen for. Let each member of the class close his eyes and wave his hand back and forth with the beats as he hears them. This will show at once whether he really hears the beats or not. Very few will be able to hear them at first. The teacher may now sound the discordant tone again and at the same time wave his hand where the class can see, keeping time with the beats. This pointing out the beats, as it were, will help a number to hear them. Next the teacher should sing the tone in a whining, nasal voice, making his tone loud and soft with the beats of the sample tones. By exaggerating this, he

will be able to show many of the others just what to listen for. Let all shut their eyes and try again. More of them will wave their hands at just the right speed. Then use other tones with more or less frequent beats and many of the class will hear them perfectly and will always afterward know what to listen for in striving to judge intonation. A number will not learn so readily and these should sit at a piano in a perfectly quiet room and hold tone after tone in the middle of the instrument until they can hear the beats readily.

After a pupil has learned to hear beats produced in a certain way it sometimes baffles him to hear them produced by a new combination of tones. For instance he may be able to hear beats produced by two piano wires but may not readily recognize those produced by a cornet and the piano. He should not be discouraged. Practice with this new combination will soon remedy the trouble and he will soon be able to hear beats when they are present in any combination of tones.

All the instruments in the class or orchestra should hold the same tone until a perfect unison results. Next chords must be held until perfect, the proof being entire absence of beats. The student should stay away from the piano when studying perfect chords, for there are no perfect chords on the piano.

Let it not be thought for a moment that time should be taken from every rehearsal to go through this drill. Not at all; merely practise until the pupil can hear the beats. When he hears them he should raise or lower his tone a trifle until the beats disappear. He will only be able to do this on very slow music at first. Later he will develop such speed and accuracy that he will be able to sing or play in perfect tune in rapid passages. Pizzicato string passages are hard for beginners to play in tune for the ear has not time to judge and tell the hand to change the pitch on extremely short tones.

§40. Listening for Beats

The student must constantly listen for beats and play or sing with a perfectly steady, smooth, long tone so that he will have time to hear the beats, and, having heard them, have time to change the pitch slightly until the tone is in perfect tune. Practicing in this way he will finally become so sensitive to perfection of intonation that he will tolerate nothing else, and he will become so expert in remembering the sound of exact intervals and how they are made that he will need to do very little pitch changing on the same tone.

§41. Testing Intonation

As a further step to perfect intonation, let the leader of any body of concerted singers or players have his musicians pause on chords that are not exactly true. Some signal, such as holding the baton still, if the leader is using one, or a tap on something if the leader is not beating time, will mean that all are to hold this chord until it is perfect, the leader

meanwhile calling attention to the offending part or player. When the chord is perfect, let two taps, or a movement of the baton, be the signal for all to go on.

If, as so often happens, this does not perfect the chord and the different tones of the chord are not in unison, stop the other parts one by one with an outward gesture of the hand, leaving one section sounding and let them hold the tone until the unison is perfect. Then stop them with the outward gesture. Then with a beckoning movement of the hand bring in another part and allow these to perfect their unison. Stop these by the outward gestures and beckon in another part to perfect their unison. When all the unisons are perfected beckon in one part after another, eliminating the beats each combination will produce if the parts do not sound the right interval. When the whole chord sounds perfectly smooth, start the musicians on with two taps. The taps must be made with something that will give a clear, distinct sound, loud enough to be heard above the music. Either a miniature slapstick or a castanet with a handle with one clapper removed will serve as a signaling device.

This routine of one tap to hold, two taps to go ahead, three taps to stop, waving out and beckoning in the parts, is a very simple and efficient way of enabling musicians to test their intonation, and practice of this kind improves the intonation of any ensemble wonderfully. It is especially valuable with beginners.

Pupils become greatly interested in this work, as they soon see that here lies the way to that perfection of intonation which every musician wishes to attain. Here indeed is the short and certain road to perfect intonation without which music is even worse than "sounding brass or tinkling cymbals"—a weariness to the ear. Only when the intonation is perfect has the pupil the opportunity to know and appreciate the beauties of true music.[1]

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[1]Further directions for perfecting intonation by "humoring the tone" will be found in Part Four. There are exercises in the Students' Books for drilling upon this.

CHAPTER VIII

§42. Legato Playing

LEGATO playing is the open sesame to musicianship on account of its influence on intonation and the development of the player's ear. It takes an appreciable time for the ear to hear and classify tones as to pitch, especially for beginners, so the longer the tone the more time the ear has to judge of its pitch and the more accurately it can be done.

When the ear is called upon to judge differences of pitch between tones, not only is the length of tone very important, but the shortness of the gap between tones. The memory for the pitch of one tone fades very quickly when another tone is sounded, but the longer the tone the longer its memory persists. So the longer the tones and the nearer together they are, the better can the distance be judged by the ear.

When the ear is deciding exactness of pitch, variations of power, which are always present when the tone is not perfectly legato, further complicate the process and put off the day when a pupil can play in tune.

Legato playing is the foundation of all finished, artistic music of any sort. The pupil who is able to produce a perfect legato tone on his instrument can then add anything he wishes as an ornament to this beautiful foundation in the shape of vibratos and dynamics.

The above likewise plainly suggests the type of music the young player should use. It should be slow, dignified, and richly harmonized. This is the very kind of music young players enjoy most, instead of the more rhythmic type that is often considered more attractive to the young. This is the kind of music used in the lower books of the *Willis Graded School Orchestra and Band Series* and in the *Universal Teacher*.

The legato tone of the strings is produced by long, slow, steady bowing. The winds should use a long, steady, slow breath. In both cases the soft, steady tone should be developed as soon as possible, and be habitually used thereafter.

Going from one tone to another on the strings without changing the speed or direction of the bow, or if direction is changed, the speed is constant, and the change of direction so quick that it is not audible, should be the rule for strings. Later many variations of stress may be used as the expression demands, but the smooth, lovely, quiet legato tone will be habitual.

§43. The Dangers of Vibrato

The vibrato, which has come to be so much used that a collection of string players appear to be suffering from *paralysis agitans*, is a distinct

and growing menace to good intonation, as will be seen from the above paragraphs. The vibrato should be learned of course, as it is a means of expression, but its use should be postponed or restricted until the pupil has developed an accurate ear that will enable him to play exactly in tune.

Going from tone to tone on the wind instruments without tonguing, stopping the breath, or changing its pressure except as demanded by the different registers, will make a smooth, beautiful, quiet legato tone an artistic foundation for the wind player. To this can be added all the ornamentation necessary to dynamics later.

The players of wind instruments should study legato playing very intensively. They usually do very little of this, and are seldom perfectly in tune. So much of the music is staccato and made up of short tones that the ears have no chance to develop, and any tone anywhere near in tune is accepted as accurate. The test is to ask the usual band brought up on staccato after-beats to hold a long chord and hear the resulting dissonance.

§44. Phrasing

Phrasing plays a very important part in the artistic rendering of music of all kinds. It is very closely connected with legato playing. Phrasing means carrying a smooth, beautiful, connected tone to the end of the phrase. A slight pause to allow the phrase to be set off from the others, and the musician starts the next phrase. If the pause between phrases is too long the continuity of the piece is lost, and if too short the whole is run together and sounds incoherent. The musician's artistry, or lack of it, shows very plainly in his phrasing.

The teacher should see that the pupil develops good phrasing habits from the very beginning. The most common faults in phrasing are an undecided ending to each phrase and too long a gap between phrases. The following diagrams will illustrate. We will suppose that a legato tone is an established habit. The perfect phrasing might be represented as in Fig. 1. The end of each phrase is a little louder than the rest to give

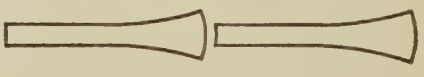

Fig. 1

it distinctness of finish. Fig. 2 shows a common error. The phrases

Fig. 2

are smooth and the ending decided, but the pause between is too long. Fig. 3 shows a still more common form of error in phrasing. The phrases

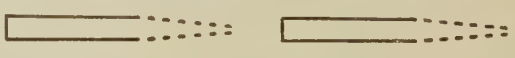

Fig. 3

are smooth enough but the endings are indistinct and the pause too long.

There are a number of other errors in phrasing such as stopping in the middle of a phrase, or over-accenting, etc., but they are so apparent that the teacher can correct them at once. The two errors illustrated in Figs. 2 and 3 are the ones that are most often overlooked as the result is so near good that it gets by, yet the effect is not perfectly pleasing in some unexplainable way to either teacher or pupil, and so both are vaguely dissatisfied. Ending phrases as in Figs. 2 and 3 instead of as in Fig. 1 is the difference between pretty good and artistic perfection. They are like two dresses of the same pattern and material: one will look fairly good, and the other, made by an artist, has a "style" to it that the first totally lacks. Pupils in the public schools where singing is taught should know how to phrase perfectly in their singing.[1] The music of any selection should be plainly marked as to phrasing so that the student may know the beginning and ending of every phrase. There remains only to apply the proper mechanism to produce the desired result.

§45. Breathing

With the wind instruments phrasing is comparatively simple. The pupil uses his breath exactly as he does in singing. He expels the breath with the smoothness required, holds the last note to its full value and ends the phrase with a slightly greater breath force than was used for the remainder of the phrase. Instantly he takes another breath and begins the next phrase. Here is the rub: getting that next breath quickly enough. This depends on whether he has been taught to do it properly or not. Pupils are very apt to breathe wholly with the chest and very little abdominally, with the ribs at the sides or under the shoulder blades.

Players of wind instruments, beginners especially, should be very particular to sit correctly. The pupil's back should be straight, but not necessarily vertical, the body poised slightly forward and the regular "singer's breath" should be habitual. This means a still, high chest, the lower rib and abdominal muscles doing all the work. Exhaling should begin with the abdominal muscles, the lower ribs sinking in as soon as the abdominal muscles have been contracted as far as comfortable. For further information the reader is referred to any standard work on the use of the breath in singing, for the more nearly the player of any wind instrument approaches the breathing method of the fine singer the more easily and artistically he plays his instrument.

The teacher of beginners on all wind instruments and the leader of bands and orchestras cannot be too particular about the way his wind players breathe. Many a leader is dissatisfied with the artistic effect of his wind sections. A casual inspection often reveals the fact that only the drummers are breathing correctly, and they only because they cannot reach their instruments without poising forward in the correct position. Here is a little device that will compel the players to learn to

[1]For further suggestions on phrasing the reader is referred to *Grade School Music Teaching*, by T. P. Giddings.

take breath quickly and also show them their shortcomings. Let the leader hold up the baton or one hand on the last note of a phrase. The players hold the tone. When the leader wishes them to stop the tone he moves his hand or baton sidewise a few inches. This is the signal for the pupils to stop the tone and take a new breath and begin the new phrase as his hand instantly jerks back to position. A little practice of this will make plain to the player of wind instruments that he must hold the last note of a phrase to its full value and then take his breath so quickly that he can begin the next phrase on time. This is, of course, contrary to fact, but it is the impression the skillful player gives by giving the final push to the last note of the phrase and giving himself just time enough to get another breath and start on time. The shorter this gap, the longer the final tone can be, and the longer the final tone is without distorting the rhythm, the more finished the performance sounds. The shortness of this gap depends on the speed with which the pupil can get a new breath and start a new tone. Much practice on this will be valuable.

§46. The String Section

The phrasing of the string section is simpler in a way, as the bow can be used more quickly than the breath and its motion is more apparent and thus easier to control. In another way it is more difficult, as the holding of the last note just the right length, and then leaving a short space between that and the first note of the ensuing phrase, means that the bow must be either stopped, lifted or the direction changed at just the right instant. Another difficulty is the almost universal tendency of young players to use too much bow at the beginning of a stroke and have too little bow left to make a good finish. The bowing should be very carefully marked, the general rule being that the accents come on the down bow as much as possible. A noted conductor is in the habit of telling his string players to "Sing, sing, as you play!" meaning that they are to imitate good singing.

The posture of the string players is very important, though with them the breathing is of secondary importance; but anyone who wishes to be fully alive should breathe deeply as the singer does, and he should poise forward to make this possible.

Another factor of great importance is the kind of chair the players of all kinds use. The ideal orchestra and band chair would be higher than usual, but suited to the height of the pupil, the seat rather narrow from front to back, and a low back with no slant.

§47. Tone-Quality

On this point many school bands and orchestras fail utterly, although the same schools may attain excellent tone-quality in chorus work. Many school band and orchestra members are allowed to play as loudly as possible all of the time, and the result is a lack of appreciation for good tonal quality, balance, and intonation. Any band or orchestra that is capable of playing *pianissimo* with good balance has solved the difficulty,

for the one way to improve tone-quality is practising sustained tones or chords *pianissimo.* All flaws show plainly when an attempt is made to secure a real *pianissimo* and the players realize their deficiencies and are usually willing to work to improve themselves. Competitive "tryouts" (see later) will produce the desired results in the shortest time. Exercises that will serve the purpose are given in the students' book for each instrument. Directions for using these are given in Part Four of this volume.

§48. Tuning

Everyone realizes the importance of tuning for both band and orchestra, but there is a great variety of opinion as to when, how much, and how thoroughly to do it, and the practice varies from the teacher who ignores it entirely and lets the pupils practise on untuned instruments, to the one who spends half of each lesson or rehearsal in tuning. The happy medium lies somewhere between. Tuning is one of the short-cuts to music and if the pupil can be made to see this he will work on it as gladly as he will on any other exercise that he sees the need of his doing. Tuning is one of the very first things to be taught to any pupil learning any instrument that has no fixed intonation. Pupils are greatly handicapped in their music study until they learn to tune their instruments. They play out of tune a great deal of the time when they are beginning, but the very effort of tuning sharpens their ears and the well-tuned instrument enables them to reduce the out-of-tune playing to a minimum. The question, "how long to take to tune, and how early to do it," has been answered "as short and as early as you can get pupils to do it." The teacher should never tune instruments for pupils. The various tunings will be given later under the separate headings of band and orchestra.

§49. Ear Training

Ear training is a very wide term and a large number of different things gather under its banner.

In addition to training players as parts of an ensemble we must look further and make sure that we are not narrowing them instead of making them broad musicians. The first question is: how much of the music that the ensemble makes does the individual player hear? This is one of the gravest questions before music teachers of all kinds. The answer may be hinted at by looking at that funniest thing in all music teaching which we find in so many colleges and conservatories, the "ear training" class of advanced piano students. What were they doing with their ears during the long years they were pounding the keys? The same thing is apt to happen to the player in band or orchestra. Individual work as outlined later will greatly help the pupils to hear what others play.

§50. Seating

The public school band and orchestra leader has a dual work to perform. He must develop the musicianship of the players to the highest degree and as broadly as possible, and also develop as fine an ensemble

as he can. These two phases of his work are not always synonymous, although one helps the other. They should both be kept in mind and the training of band and orchestra should be planned to meet these two ends in the best proportion.

The leader has in mind the greatest good that can come to the individual player, and he treats him accordingly and places him where he belongs and gives him a chance to become a well-routined and valuable part of a fine ensemble. When he arrives at a certain stage of expertness he begins to play professionally. This is one very important phase of the work of the leader and it must not be lost sight of, but it is not the most important.

The important thing is: how wide is the student's knowledge of music? Does he get a clear and comprehensive, and therefore enjoyable, idea of the music played? Does he know how the other instruments sound in the ensemble? Does he know what the other fellow's music looks like? In other words, is he becoming a well-rounded musician as well as a valuable member of a musical ensemble? As orchestras and bands increase in size and perfection, it is increasingly necessary that the development of the all-round musician be not lost sight of in perfecting the ensemble.

The following may give us a hint. After a young people's symphony concert, a professional player of long experience remarked to the supervisor of music who had told the audience about the selection, "I was glad to hear what you said about that piece. I have played it many times and never knew what it was all about until today." This anecdote, and the further fact that many of the great conductors are viola or cello players, may point the way to a betterment of the musicianship of all and to the great betterment of the ensemble as well as the individual player, for whatever improves the one helps the other.

With the usual seating of the orchestra the conductor hears everything, that is why he stands in the middle, in front. Yet even he does not get as good an idea of the music as does the person in the audience. What of the concertmaster who sits near the conductor? He gets a still less perfect idea of the sound of the ensemble though he has the best position, next to the conductor. If this is true of the concertmaster, what of the violinist in the sixteenth chair of the first violin section, right next to the string bass? Does he get any very coherent idea of "what it is all about"? Ask him what he knows of the viola music and he will probably say he has never heard the violas except when they played alone. If this fellow has played in this position for a year, he has acquired dexterity on his own instrument and is becoming a more valuable member of the ensemble every day, but his advancement in the hearing and enjoyment of ensemble music has been very one-sided. He has heard wind instruments more clearly perhaps, as they play by themselves more than the others. It has been stated that many conductors come from the ranks of the viola or cello players. The conductors are the best all-round musicians or they could not be conductors. Now why are they usually viola or cello players? Is it not partly that players of these two

instruments almost invariably sit in the middle of the orchestra where they have the best opportunity to hear all the instruments and get a well-balanced idea of what the music "is all about"? Should we not take the hint and give every student in band and orchestra the opportunity to hear the whole ensemble from various points by frequent changes in seating at rehearsals?

§51. Suggestive Plans

While it is true that frequent changes in the seating of band and orchestra will injure the ensemble somewhat, the good of the following suggestive plans supplemented by others that will occur to the teacher will far outweigh the bad.

Reseating an orchestra of any size entails a good deal of confusion and unless done with a definite system will seriously diminish the rehearsal time. It is also well to have the pupils rehearse a part of the time in their regular positions to be ready for public appearances. If the rehearsals are held every day, let the players sit in the regular positions two days, say Monday and Tuesday, and in the changed positions the other three days. Let them use the same changed positions for a week or two and then make another change and so on until all the pupils have had a chance to become thoroughly familiar with all parts of the ensemble.

There are several ways to arrange the seating. Probably the best is patterned after the "place cards" often used at large dinners. A large card with one pupil's name in letters large enough to be seen easily from a distance may be placed on the music rack by the librarian after he has placed the music for the rehearsal. Each pupil as he enters can instantly see where he is to sit and no rehearsal time need be wasted. The librarian should have given him or should himself make out some systematic seating plan to follow as he places the names on the racks previous to the rehearsal.

Two general plans should be followed: mixing the players indiscriminately and transferring whole choirs to different parts of the platform. These two plans will give players an opportunity to hear the different instruments alone and also to get a clearer idea of what a whole choir of similar instruments does. The seating plans for orchestra shown in Figs. 4 to 9 are suggested. Band leaders may easily see a great variety of ways to follow similar plans. After a few weeks with a number of changes in seating, it will be found that the pupils are more capable of grasping the musical meaning of a selection and the leader will secure a better balance and it will be easier to bring out the solo parts than it ever was before.

This idea will help orchestras and bands at every stage of their development. Change of position is not so necessary in very small ensembles where every one can hear everyone else, but even with a dozen players these should move around so that the different effects are evident to all.

Another suggestion is to allow one or two pupils at a time to stop playing and go around the orchestra and look at the music and listen to

the different instruments. The arrangement of music in the *Willis Graded Orchestra and Band Series* lends itself admirably to this. The rich, full harmony, the unbroken flow of melody in all the parts, the simple rhythmical problems—all give the pupil a chance to grasp the entire content of the selections very easily and he grows up with a well-proportioned idea of music with especial emphasis on the *harmonic* content.

In using the *Willis Graded School Orchestra and Band Series*, Volumes One, Two and Three, the violin, cornet and C saxophone books have the complete harmony in three parts in each book, and it is preferable to have the players sit in trios, reading three from each book rather than have them divided into sections, as in this way they learn to read and hear all three parts at a time. By placing these trios indiscriminately among the other players all the members of the orchestra will become accustomed to hearing the full harmony on all sides of them. Another good plan is to have the clarinet players play from the cornet music part of the time and other players play music written for other instruments. (See Preface to Conductor's score in the *Willis Graded School Orchestra and Band Series* for table of substitutions showing which parts may be played by other instruments without transposition.) Pupils who have learned by the *Universal Teacher* system will be able to play the part of any other instrument by transposing, thus giving them a good use for their knowledge and an excellent opportunity to learn more about the other instruments and the parts they play.

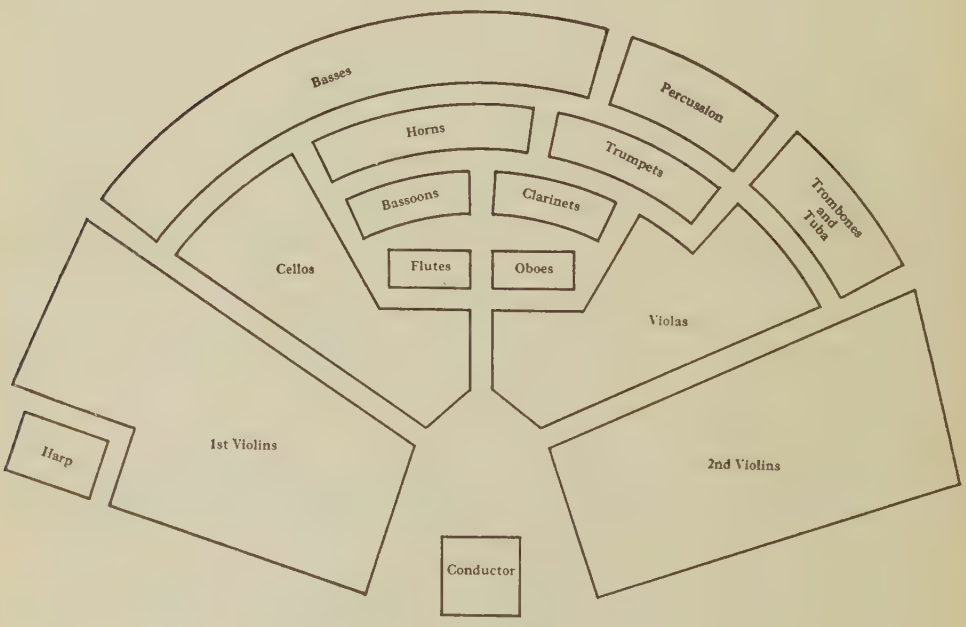

Fig. 4—USUAL SEATING PLAN

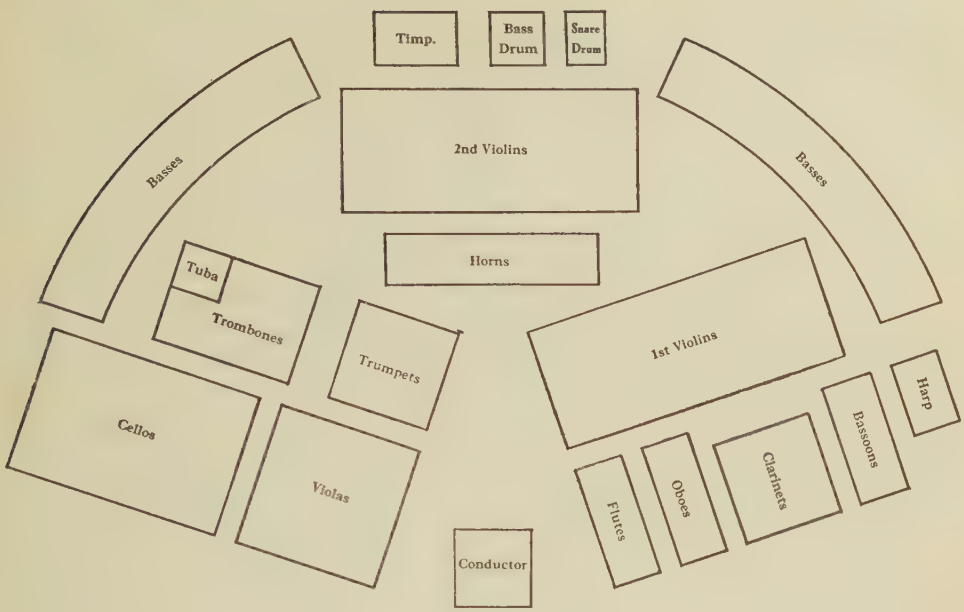
Timp.
Bass Drum
Snare Drum
2nd Violins
Basses
Basses
Horns
Tuba
Trombones
Trumpets
1st Violins
Harp
Bassoons
Cellos
Violas
Clarinets
Oboes
Flutes
Conductor

Fig. 5

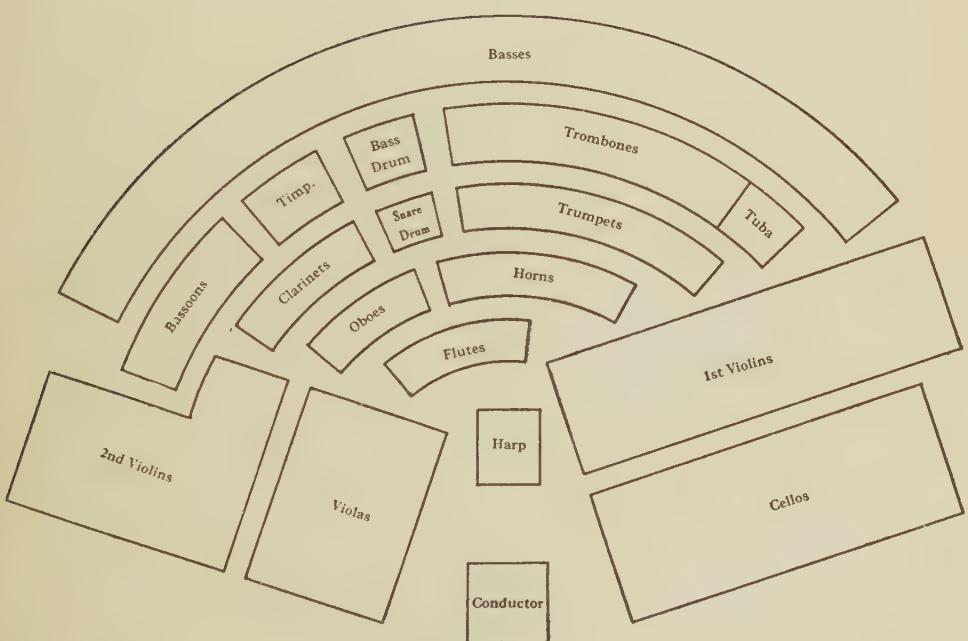
Basses
Bass Drum
Trombones
Timp.
Snare Drum
Trumpets
Tuba
Bassoons
Clarinets
Horns
Oboes
Flutes
1st Violins
2nd Violins
Harp
Violas
Cellos
Conductor

Fig. 6

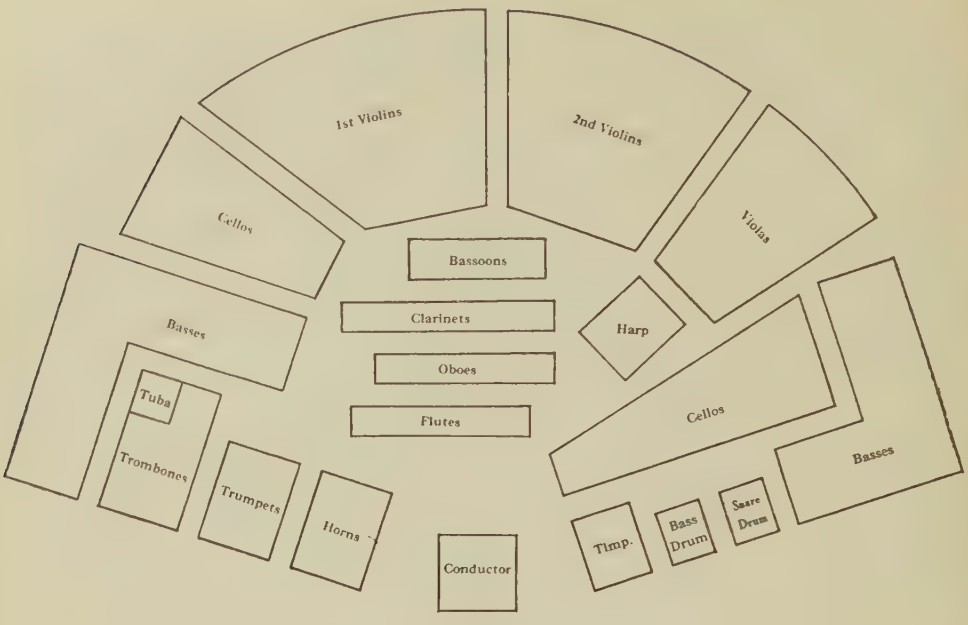
1st Violins
2nd Violins
Violas
Cellos
Bassoons
Clarinets
Harp
Oboes
Flutes
Basses
Tuba
Trombones
Trumpets
Horns
Cellos
Basses
Timp.
Bass Drum
Snare Drum
Conductor

Fig. 7

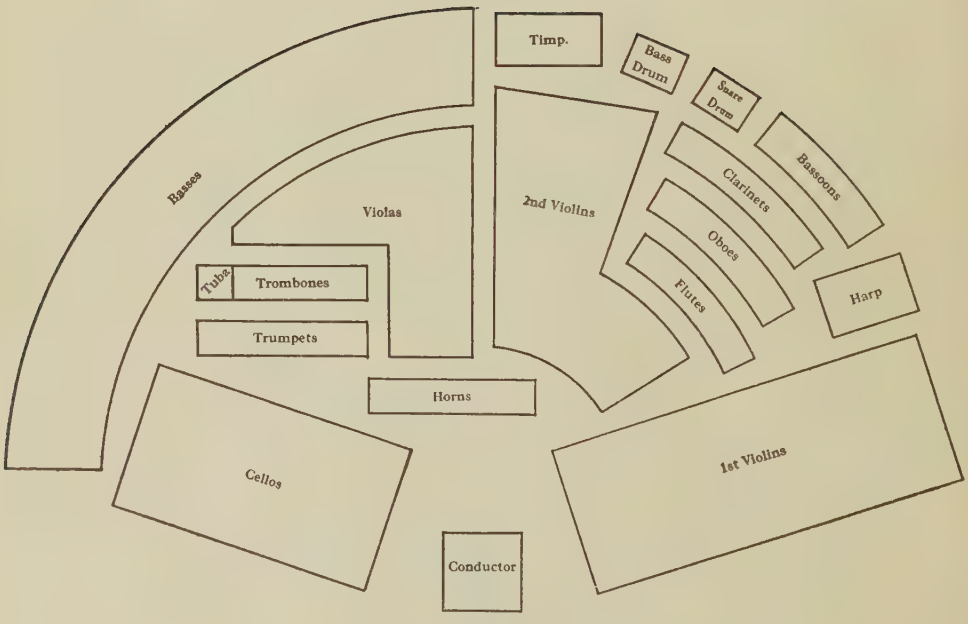
Timp.
Bass Drum
Snare Drum
Basses
Violas
2nd Violins
Clarinets
Bassoons
Oboes
Flutes
Harp
Tuba
Trombones
Trumpets
Horns
Cellos
1st Violins
Conductor

Fig. 8

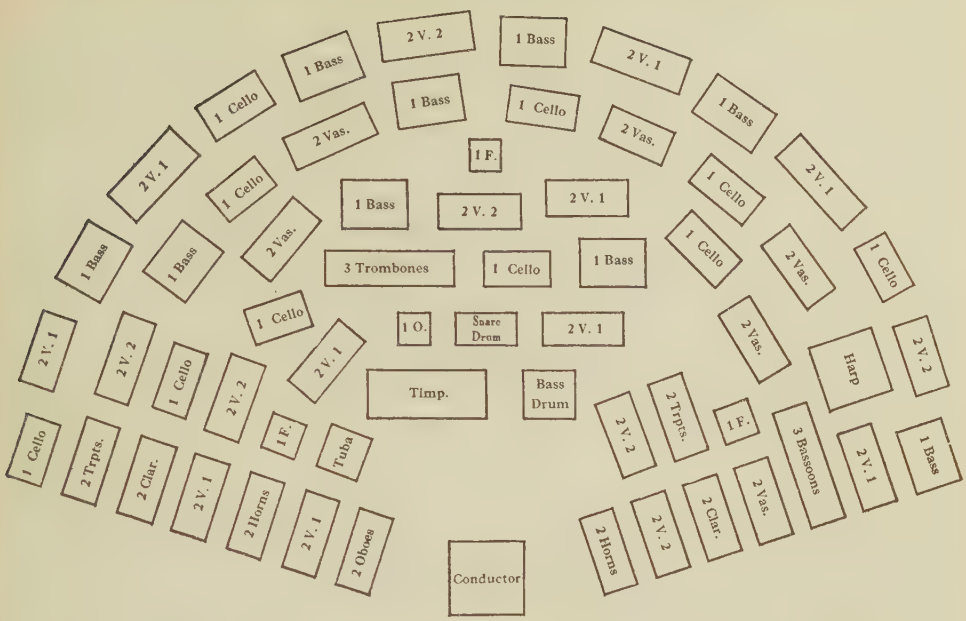

Fig. 9—"SCRAMBLED"

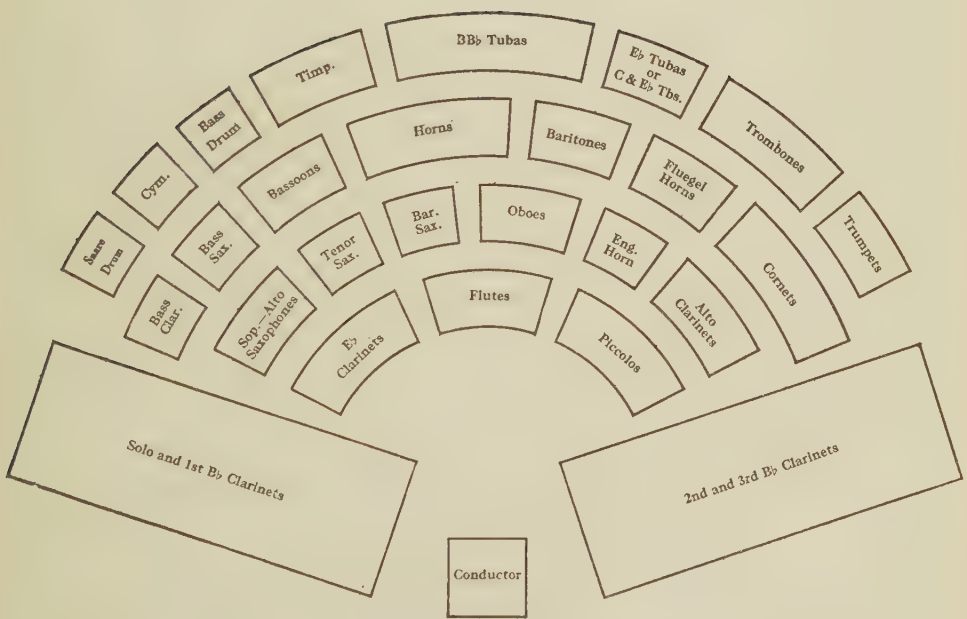

Fig. 10—SEATING PLAN FOR SYMPHONIC BAND

§52. Following by Ear

The ability to hear and enjoy the ensemble and also sharpen the ears of the players will be greatly enhanced if in connection with the above-mentioned changing of seats the players are allowed to lead themselves, or in other words the teacher or some player simply gives the starting signal and the players keep together by ear. A great deal of this should be done at all stages of ensemble development, from the beginners' classes to the high school symphony orchestra or band. The Richmond High School orchestra gave a very effective exhibition of this when they rendered the Finale of Tschaikowsky's *Symphonie Pathétique* without a leader. Everyone who heard them remarked upon the perfect way in which they kept together and with what intense verve and abandon they went through it.

§53. Moving Quietly

Another very important form of ear training is teaching a student to move without noise. Children should be taught early in life that they must not annoy others, especially in the schoolroom where everyone is trying to hear what is going on. Pupils who are allowed to go "clumping" around are not only learning to be very selfish, but are destroying the efficiency of the class.

Young people who annoy others carelessly should not be excused but should be taught that carelessness is but a bad form of selfishness. Noisiness is particularly obnoxious because it steals from others their time and their nerves. It is not sufficient simply to tell a child to be quiet, he must be taught how to do it. Ear training on this subject should commence in the home, but as it seldom does, the kindergarten and first-grade teacher must begin it. The band and orchestra leader and teacher of instrumental classes should carry it out very carefully both for general culture and to make the ears keen for the music. *Nothing* but music should be heard in any instrumental ensemble. All other noises should be eliminated. The solution of the noisy child problem is very simple. He must be taught to listen to every move he makes. As soon as he does this, he will become expert in moving quietly.

It is foolish for a teacher to tell a room full of children of any age to "sit still," because it is impossible for them to do it. So why weaken your hold on them by asking for something that cannot be done? There is a much better and more sensible way. Let the teacher ask how many can sit perfectly still for five minutes. Nearly every hand will go up. The teacher may say, "I am sure it cannot be done, but if you think you are able to do it, just try it." Of course, some one will move in a few seconds and that will prove the point. The effort to sit still will be more tiring to all and the teacher may then remark, "Of course, you cannot sit still five minutes and nobody wants you to try, because it is not a good thing to do." Everyone will relax and the noise will recommence. Now the teacher may ask, "Can you hear well?" Of course they will say "yes." "Now listen and hear how many noises are going on." It will become as still as death and the clock will tick with terrific loudness.

"That is the way it should be in the schoolroom, so that we can concentrate our minds on our work. Now as we cannot sit still and as it must be quiet so that we can work, what are we going to do?" The answer will usually be, "Keep as quiet as we can." "That will not do, as we must be perfectly quiet." The solution is simple. The teacher may say, "Just use your ear every time you move and it will be quiet. Move all you like, provided no one hears you."

This will put into the pupil's hand the exact tool he needs and then let him work out quietness for himself. When a child forgets and moves noisily he may be told, "Return to your seat, you have left something behind you." He will return, look, and find nothing. He will very likely ask what it is he has left and the teacher may smile and point to her ear. The joke will be on him and he will appreciate it and listen the next time.

This last form of ear training not only belongs to the music lesson to increase the efficiency of the work and to make the ears keen, but it will make the pupil more observant in every way. The parent or teacher who neglects to give the child this ear training is depriving him of one of the best forms of culture that can be devised and is sending him out into the world handicapped with a pair of unobservant ears, besides allowing him to make a nuisance of himself in many ways. Nothing so makes for selfishness in anyone as to feel free to disturb, or worse yet, to be unconscious of the fact that he is disturbing others.

Discrimination is what the child needs to learn and when he learns the proper way and the proper place to make noises, he will be more untrammeled than ever because he will not disturb anyone and will not have to be said "don't" at as often as before.

Such training as outlined in the preceding paragraphs would be of great value to audiences of every kind. In any audience room there is always the rustle of programs and wearing apparel and other sounds that are wholly unnecessary. If the people who make these sounds had been taught to listen, not only to the music, but also had been taught to listen for and to eliminate other sounds, they would enjoy the entertainment far better—so would their neighbors. As a step toward this, the music teacher should eliminate every sound except the music from her music lesson. Even the turning of leaves should not be heard. If the pupil makes a noise, there are many things, besides scolding, that the teacher can quietly do to remind him that he is disturbing others. The teacher may ask the pupil privately if his ear is a little dim. Always lay it to dim hearing. That will bring home to the pupil the cause of the trouble and will show him just what organ to use. Above all, do not say "sit still" to your pupils. It is futile and every child knows it and he stamps you as an unreasonable being the minute you say "sit still."

One of the very best ear training devices in the whole list is the quiet teacher. Many a teacher mourns over the noisy pupils she is caged with and every time she walks across the room her heels beat a tattoo on the floor that would make a snare drum rattle with envy. How can pupils be quiet with such an example to endure? A fine ear trainer is a

pair of rubber heels on teacher's shoes. They will not only rest the teacher but will quiet the pupils wonderfully.

§54. Material

Good material of the right kind and plenty of it used in the proper manner is one of the most important problems the orchestra or band leader has to face. The proper solution of this solves practically every question connected with the training of music students of all kinds.

First let us discuss "good material." This is a most flexible term and capable of many interpretations. Good material means what does the most good in the using of it, as well as whether it is intrinsically good or not. The reaction of the pupils must be studied very carefully in deciding what good music is. At some stages the veriest trash may be the best music possible to use. This opens up a vast field of discussion but the wise leader will study his pupils and while not following their whims slavishly he will start with what they like and gradually train them to like the best. Fortunately the average pupil likes the best when he has acquired a little dexterity and can read music fairly fluently.

Also those pupils who have grown up with the music that appears in the *Universal Teacher*, and the succeeding *Willis Band and Orchestra* books have been raised on a kind of music that is well-balanced, and, as they have played music that is harmonically rich from the very beginning and have had to listen to a number of parts, they are capable of hearing harmony and therefore appreciate music in a far higher degree than was formerly the case. Later they are ready and able to play and enjoy the richer and more varied character of the really great music.

Plenty of it comes next in importance. Here is where many school systems fail. What the student hopes to do, and what training he must have to be able to do it, may help to decide how much material is necessary. The important thing for any student is knowing many things. The botanist must know many plants, the geologist must know many rocks. The literary student must know much literature, and the music student must know much music. To know literature one must read rapidly, widely, and well. The instrumental player must also be a fluent and accurate reader if he ever hopes even partially to succeed.

§55. Care of Material

Each student should have an envelope in which to carry his music for home rehearsal. If in this envelope there is a stiff piece of cardboard that can not be folded or rolled, all the better, as music should be kept flat. Another and better, but more expensive plan is to put the music in loose-leaf folios. There are several of these on the market. With these the permanent repertoire of the band or orchestra can be put in shape to be used most expeditiously at rehearsals or concerts. It is suggested that the Yawman and Erbe folding and expanding envelope 15 x 12 inches be used. Pupils should be taught to keep the music in the best of order and replace every piece that is lost or defaced in any

way. Many leaders do not allow students to take music home as it is very liable to be lost or defaced. This is a poor policy, for they should learn to take care of music and return it just as they do books from the library. The librarian should have some system that will take care of all this.

§56. The Librarian

Every band and orchestra should have a librarian who has charge of the music. He should be methodical and trustworthy, for it is a very difficult and important work to look after the music of an ensemble made up of careless boys and girls, and have the music at hand when wanted. Teaching players to be careful of their music is one of the hardest things the leader has to do, and he should have an able assistant in the librarian.

Before the rehearsal the librarian should distribute the music, which should be kept in folders or envelopes with the name and parts written or printed on the outside as is done in the music stores. The librarian should know in advance just what music is to be used at the rehearsal. He should put all the music for each two players in a folder or envelope and place this on the rack. One of the greatest time wasters in the average rehearsal is the distribution and collection of the music. The folder or envelope plan saves time. The librarian should have entire charge of this, as the leader has something more important to do.

At the end of the rehearsal each pupil should put the music he is to take home and rehearse into his private envelope. This should be preferably an envelope with a good-sized flap that can be tied shut so that the loose leaves of music cannot fall out. With the envelope containing a stiff piece of cardboard and a flap that shuts, risks are reduced to a minimum. Before the pupils are dismissed the leader should see that this music is placed in the envelopes and the envelopes closed, and the rest of the music placed in the holders for the librarian to collect after the pupils have gone.

When purchasing music the leader should get parts enough for the full ensemble as he expects it to be. It is easier and often cheaper to buy them at first. The Music Supervisors National Conference publishes an official classified list of orchestra and band music. Their list may be purchased from the second vice-president, who publishes the *Supervisors' Journal.*

CHAPTER IX

§57. Conducting

CONDUCTING is for the purpose of giving some selection in public so that the leader's idea of the music will be interpreted by the players or singers. This book does not venture into the realm of artistry. It only aims to give a few hints as to how the artistry of the leader may be most easily and definitely expressed to the audience through the medium of the body of musicians he is conducting.

§58. Two Kinds of Conducting

We are often called upon to observe two kinds of conducting. One is the spectacular, where the leader claims all the attention; the other, the one where the leader uses the baton as it should be used, as the power to weld the whole body of musicians into a consistent whole. This quiet style of leading, with a firm hold of the players, was wonderfully exemplified by Theodore Thomas. His beat was as definite as clockwork and there was no mistaking it, even by a novice.

The pupils should know their music so well that they can play it perfectly without cues. The leader should show the speed and dynamics of the selection, but the players should count their own measures and know exactly when they are to come in. This kind of conducting is the best to use with amateur orchestras and bands since it keeps the members alive and makes them more self-dependent. For the leader to do too much of the thinking for the musicians is as bad as to play with them when they are learning new pieces.

In public performances, of course, cues should be given, but the players should be so well trained that the piece will not be spoiled if the leader slips up on a few cues. The fact is that a fine teacher of orchestra or band is seldom a good leader, and a fine leader of orchestra or band is seldom a good teacher. As the two things are diametrically opposed to each other, it is very difficult to do both. A teacher must keep still and let his pupils learn by experience. The leader must do just the opposite. He must keep everything going and preclude the possibility of mistakes. This is good leading, but very poor teaching, as the player should learn to lead himself first. Then he is ready to be led. This is one of the difficulties for the average supervisor of music, for he must be both a teacher and a conductor. In learning new selections, musicians should keep together by ear, even in bodies of several hundred. This gives them a

most valuable ear training, which they will not get if the conductor beats time either visibly or audibly. They should also play with their own expression first, after which experience the leader should mould them according to his own ideas.

§59. Beating Time

It is well for the supervisor of music to read many books on conducting and use the good points of all, but he must adopt some system and stick to it so that his pupils will know what to do. In any event, when he is conducting, he must be the real leader and insist that his musicians follow him perfectly. The more plainly and simply he beats, the better they will follow. The system of conducting here outlined has these points to recommend it. It is simple, and is so sufficiently universal that strangers have no trouble in following it.

Any set of signals that will tell the players how the leader wants the piece to go will do. Of course, the leader has made an exhaustive study of the piece and if he knows it by heart, all the better, as he will have his eyes free to see what his forces are doing. As to the proper interpretation, the leader should be free to do as he pleases. It all should rest with him. The players should do as he wishes.

In beating time, the conductor should move the baton as follows, in the different measures. In two-beat measures, the movement should be straight down for the first beat and straight up for the second beat (Fig. 11). This will give a perfect representation of the measure. In three-beat, the baton should go straight down, straight to the right, and then obliquely to the starting point (Fig. 12). In four-beat, it should go straight down, obliquely left, straight right, and then obliquely up to the starting point (Fig. 13). In six-beat measure, it should either go down and up, as in two-beat measure, three eighth-notes to a beat, or it should go down, left, left, right, up, up, to the starting point (Fig. 14). The other divisions of compound time are usually done as three- and four-beat measure.

Fig. 11

Fig. 12

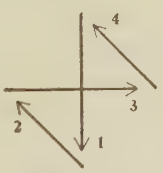

Fig. 13

Fig. 14

§60. Holding the Baton

The criticism is sometimes made that bringing the baton straight down is apt to bring it too low to be seen. The answer is that it should go straight down so that "down" means *down* instead of some vague oblique direction. The leader should stand high enough to be visible to all, hold his baton high, and then move it but a short distance. There is no reason for waving the baton in wide sweeps unless the ensemble is extremely large.

The length of the movement tells the power of tone to be employed, and the speed of the baton, of course, gives the speed of the piece. As the side of the baton should be visible to the players it should be of very distinct color. White is best. Some contrasting color should be used by lady leaders.

§61. Varying the Beat

When conducting rehearsals, the leader should vary the time a great deal and never vary it the same way. It is better to have the players alive and in a state of expectancy than to have them know in advance how fast or how slow, how loud or how soft, they are going to play. If they are too sure of what the leader is going to do, they will not watch closely. This will make the performance dull and soggy, and will cause the leader to tear his hair over the stupidity of ensembles in general and this one in particular, when it is his own fault. If the conductor has his players well in hand at the rehearsal, and drills them, not so much on the piece as in following the beat, he will have the power to play upon his forces at will. Since leaders seldom feel the same at concerts as they do at rehearsals, and since the feeling they have for the music at the concert may be a far better one than the one they felt at the rehearsal, the instrument, no matter whether it be orchestra or band, should respond to his needs. To bring this about he must drill beforehand, not on his moods but on responding to them.

Many times the conductor wonders why his players do not follow him at a performance. It is usually because they have not followed him at rehearsals properly. One of the commonest mistakes, in addition to the above, is talking or otherwise appealing to the players' *ears* during a rehearsal when the leader should have been communicating with the players only through their *eyes*. The conductor who says "ready" or raps on his stand is only laying up trouble for himself at the public performance.

The left hand should be free to turn the music, give cues, and supplement the work of the right hand. For example, a gesture with the palm toward the players may mean softer, if they have not followed the baton correctly as to power. A beckoning with the left hand will bring out a certain part louder. On holds, the power may be varied by moving the two hands nearer together or farther apart, for diminishes and swells. A very effective way to hold attention and at the same time tell the pupils how loudly to play is to use the fingers of the left hand to denote power. The hand held up with all the fingers and thumb folded means the softest tone possible; one extended finger a little louder, and so on until the whole extended hand means full power.

Successful conducting hinges on the movements of the baton, and these movements should be so definite that the dullest musician will be able to see and follow them. Poor following on the part of a band or orchestra is always the fault of the leader. Obscure beats or gestures do not compel close attention. It takes backbone to make people obey, and the leader must be firm, unyielding, and definite.

Music stands should be adjusted to the proper height at all times so that the players may see every movement of the conductor without looking up from the music. The exact height for the music stand is just high enough for the player to see the conductor over the top of the music. The music should be directly between conductor and player. Players usually have their stands adjusted too low and they cannot see the conductor without looking up from the music. This is a serious mistake and must be corrected before any degree of perfection in following can be attained.

§62. Knowing the Music

The conductor must know his music thoroughly and be able to check up on his players at every measure. Much of the band and orchestra music now on the market is not published with a score, and much time is wasted at rehearsals when the conductor has to use one part with cues, or the piano part with cues. Whenever there is a mistake he must go and look at the offending part and correct the player in that way. School ensembles should play music that has a full score so that the teacher can follow every note that is being played. The *Willis Orchestra and Band Series* has such scores and the leader has all the notes of all the instruments right under his eye. The scores are extremely well edited from the standpoint of having all the instruments listed on every page, all bowings and breathing marks included in the scores, the cued notes as they appear in the various books, and the measures numbered. Directions for reading are given in each score.

§63. Reading Scores

Reading scores is not so difficult a task as is usually supposed, for the leader only needs to see the general plan of the instrumentation as it is played, except when something goes wrong, when he may take time to figure out the difficulty from the page before him and call for the offending part to be played separately, if necessary. A general perusal of a score before a rehearsal with a liberal dose of red and blue penciling will aid greatly in reading the score with the ensemble playing the piece for the first time. With a blue pencil underscore passages that you believe will need special working out, such as rhythmic problems, staccato, chords, etc. The underlining should be very light so it can be erased with ease. The red pencil should be used to indicate obscure entrances, especially those at the end of long rests for the various instruments. If the red pencil is used too freely it will defeat its purpose, for a score full of red marks might be confusing and the marks would lose their significance. Violin entrances should never be marked since there are always a number of players to count rests and some of them should be accurate even in the first reading.

At first the leader may follow the violin part in the score while the orchestra is playing. Later he should gradually extend his range of vision to include the brass and woodwind sections and finally the rest of the string section. In beginning score reading it is well to mark only

the principal entrances with red pencil, then follow the violin parts in the score as a rule with an occasional glance up at the parts underscored with red pencil, or the important entrances. It is just as well, or better, to sit down and read the score while the orchestra is playing the piece without a conductor, learning the piece with the players and trying to locate the mistakes of the players as they occur. At first the leader may become confused by trying to read all parts at once, but he should not be discouraged for score-reading ability comes readily with practice. It is much easier to read a score without the necessity of conducting the orchestra at the same time and it is better for the orchestra to read the pieces at first without a conductor, so the above suggestion is doubly pertinent.

The serious orchestra leader will purchase miniature scores for pieces he is to hear at orchestral concerts and read the scores as the pieces are being played. A still better plan is to purchase records of pieces to be learned, then read the scores while playing the records. While reading the score and listening to the record it is fine practice for the leader to stand and conduct an imaginary ensemble with the baton, giving cues, expression, etc. It takes much practice to beat time accurately while doing all the other things the leader must do. It is only when these movements become automatic habits from long experience that the leader is able to keep his whole mind on the music, in order to give a fine interpretation. The "wooden conductor" is the one who has not rehearsed enough before the mirror. In this way one has the advantage of successive readings of the same pieces and one learns to recognize the tone-quality of the various instruments at the same time, without seeing the instruments. In most of the phonograph records the pieces are shortened and the student of score-reading should locate the cuts and mark them in his score. These miniature scores are published in the Philharmonia and Eulenburg Editions, and may be purchased at prices ranging from 20c. to $3. They are an excellent investment for the serious student.

§64. Attack

The habit of good attack is most important. All orchestra leaders realize this and work hard for it with results that are often unsatisfactory. The wise leader looks for and removes the cause of poor attack. One of the reasons most frequently overlooked is the resting position of the instruments. Let us look at the most numerous section of the orchestra, for example, and watch the violin and viola players. The leader steps to his place; every instrument flies to position; the bows poise just the right distance from the strings. The first beat is given and every instrument starts at the same time—this is perfect attack. A rest of several measures for the first violins—every instrument and bow is placed in rest position. This looks well and is restful for the players. Three beats before the next entrance every instrument and bow snaps to position and the attack of the new phrase is perfect. These players have been well trained and this leader does not worry about his attacks for they are always clear. He has taught them how.

Another picture: The leader steps to his place. He glances around. A few violins come to position. He motions to the rest. One by one they come up and the bows follow. First beat and a slovenly attack. The bows are at varying distances from the strings, the wind instruments at varying distances from the mouths, and naturally the attack is poor. Of course there are varying distances from the strings that the bow must be held for varying kinds of music, but all this detail must be attended to if there is to be even a chance for good attack. The leader must go farther than ask for good attack; he must show them how to do it, and then drill upon this "how" until it becomes a habit.

§65. Resting Positions

Violins and violas: instrument under right arm, strings out, fingerboard and neck in front. Bow resting across knees, held by right hand; left hand grasping the neck of the instrument. This is the most comfortable and natural resting position, allowing the arms to relax yet permitting instantaneous action in getting into playing position. Another resting position is holding the violin in an upright position on the knees with the left arm extended and hand grasping the neck. This is not so good as it keeps the left arm extended in a position similar to that of playing and gets tiresome.

Cellos: allow both arms to hang limply at the sides with the bow grasped loosely with the right hand, tip touching the floor providing this can be done without making any sound. The cello remains in position.

Basses: stools should be provided for the bass players, sawed off to the proper height so the player may half sit, half stand while playing. Resting position: hang the left arm loosely around the neck of the bass, holding in upright position. Extend the right arm loosely at the side, holding the bow loosely.

Wood-winds and Brasses: rest instruments across the knees, mouthpieces to the left.

Percussion players may sit if the rest is long, but must move without making a sound of any kind.

Some of the wind instruments are slower of response than others and it requires much skill to be able to gauge the attack to suit the various types of instruments. The players of larger brass instruments (trombones and tubas) must learn to start the tone a fraction of a second before the beat of the baton. The bassoons and horns have the same problem to a lesser degree while the oboist needs to anticipate the beat even more than the tuba. Perfect attack requires a sort of sixth sense on the part of the players, a feeling of mental agreement as to just when to move certain muscles in order to execute an attack much more accurately than can ever be hoped for by means of the most strict obedience to the movements of a baton. This is mental discipline of the highest type and requires intense concentration and sympathy between the players. For this reason the oldest symphony orchestras with the fewest changes in personnel invariably have the best attack. It is the best reason also for

practice in playing without a conductor. The finest example of attack is found in the string quartet where the players always play without a conductor. Some conductors endeavor to indicate by peculiar twists of their batons the exact time for the slower responsive instruments to start their attack. This is the long way around and never secures the perfection of attack that playing without a conductor will attain in a short time.

We are quite aware that the foregoing system of leading is opposed to the accepted systems in some ways, but we have endeavored to include only the plainest necessities, eliminating useless pyrotechnics that make the leader conspicuous but ineffective. Better look like a cigar store Indian and be easily followed than be a picture of willowy grace and beauty with vague meaning. The concert will sound better, and after all the concert is, primarily, to be heard and not seen.

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PART TWO:
ORCHESTRAS

CHAPTER X

§66. Function of the Orchestra in Schools

THE value of the orchestra to the school is difficult to compute. It is an ensemble ready at any moment to help out any program and is a great factor in raising the morale of the school. It is an important part of the school work which should provide for the training of pupils in all walks of orchestral life.

The vocational value of the orchestra is very great. More and more is music used and more musicians are needed to supply the demand. It is also true that very few ever do anything worth while in instrumental music unless they begin early, before the fifth grade. Many start later and do something, but the fine musicians start early and work late. It is coming to be an accepted plan that vocational work begins after the eighth grade, and many educators assume that this plan will work for music. It never will for the reasons given above.

Another function of the orchestra is the amusement and recreation side. Some years ago an account appeared in the papers of an orchestra of a hundred physicians in a European city, which met once a week and played for fun. This is an extreme case, but hints at another use for music. In both these cases the foundation should be the same.

There are many kinds of orchestras and many are the uses they fill. Symphony, dance, jazz, and theatre orchestras, quartets and other ensembles; all of these should be in the mind of the leader, and pupils should be trained to enter all of them as well as the ensembles organized for pleasure only.

§67. Organization Plans

There should be some comprehensive and progressive plan for orchestras in every town of whatever size, in every school district, and in every school. The crowning glory is the high school orchestra, for in any successful scheme there must be a goal toward which all may strive. This should approach as nearly symphonic proportions as possible. At any rate there should be a definite standard and size of this best orchestra, and this orchestra should play the very finest type of music of which it is capable. There are two very good reasons for this. First, every one wants to get into things, and if it is a little hard and exclusive it is all the

more attractive. One of the authors well remembers that when he was young and wanted to make up a chorus he used to ask the pupils to come and sing. Many wanted to be teased and entered the chorus with the wrong attitude. With advancing age and greater insight into human nature he turned over a new leaf, and has since said, "We are going to have a chorus and give a concert. If you think you are a good enough singer you may apply and get in if you can." This changed the whole attitude. They clamored for admission, and when admitted brought the proper spirit. This is right for the best orchestra, and not only furnishes a most attractive bait—admission—but gives the pupils the proper attitude when they are members.

There should be a second orchestra in every high school for those who cannot get into the first. Everyone can get into the second, and it should be distinctly understood that when there is a vacancy they may enter the first. This is a very vital point in the organization of any instrumental system. Players who are in line for promotion may occasionally sit in the better orchestra and learn from attending rehearsals. This is a great incentive.

A most effective way to fill up an orchestra is to select likely persons and place them in the first orchestra and let them catch up as soon as possible. Then when the orchestra is full in that section the waiting list may go into the second orchestra. The minute a section is full in the head orchestra that section stiffens up all along the line and pupils begin to plan ahead.

One year the orchestra at Richmond needed five string basses to complete the necessary ten basses for the first or symphony orchestra. In September five young people, two boys and three girls, who had never played the string bass but who had played piano were placed alternately in the row with the older players. The head of the section had studied with the best teacher in a neighboring city for three years. The new boy who stood next to him took no lessons but watched the other player who had. In April of the same year at a tryout this boy who had never taken any lessons and who began playing his instrument in September won second place in the string bass section, having passed one player who had taken lessons for two years. This fact is the more amazing when it is recalled that these ten players, five of them new in September, formed the bass section of the orchestra that made such a sensation at the National Supervisors Conference by its wonderful sight reading of the prelude to *Die Meistersinger.*

In Minneapolis a canny young lady of thirteen who played first trumpet in the first orchestra of the junior high she attended, visited the first orchestra of the senior high school she expected to attend in the fall. She noticed that the trumpet section was full. She inquired and found that none were going to graduate, and all looked healthy. She also noticed that there were but two French horns. She was not of the mentality that goes to make up second orchestras, so she purchased a French horn and after the summer vacation triumphantly entered the first orchestra as fourth horn, as another pupil had also seen the light. With this

background it will prove no surprise to the reader to learn that she became first horn in a few months and held her place until she graduated.

These two anecdotes—hundreds of others might be cited—go to prove that when the proper incentive is applied pupils can do wonders and orchestras can be built up with amazing speed and perfection.

Many supervisors advocate the organization of kindergarten bands or orchestras as they are sometimes called. As good fun they are all right, and as a possible awakening of desire to study some instrument and play in an orchestra later they may be of value, but as orchestral beginning they do not count.

Classes in orchestral instruments should be organized as early as pupils are able to read music in the singing classes, and large enough to handle the various instruments. This, of course, varies with the different instruments, but the fourth or fifth grade should surely be late enough to start these. The pupils who have completed the *Universal Teacher* have done quite a little ensemble playing of various kinds, and on certain of the pieces, both the wind and string classes have played together in (to the pupil) an inspiring orchestral ensemble. (Other listeners will very likely disagree, but let us look at it from the standpoint of the young participant.)

One summer in California one of the authors conducted his wind class of fifty beginners in a ground floor room that opened on the sidewalk. It was most amusing for the other author to sit where he could watch both sidewalk and class. Suddenly an urchin who had been listening stuck his head in the door and yelled "That ain't music!" This brought down the house. True, it wasn't music, but everyone of the fifty knew that it was going to be very shortly even in the new medium they were learning. Every player has to go through this period.

These pupils are now ready to come together into a real orchestra with, let us hope, a large variety of instruments. Properly carried on, their progress will be rapid and most interesting.

§68. Ideal Plan for Orchestras Below 7th Grade

The ideal plan of organizing a system of orchestras presupposes that music is an integral part of the education of pupils who are especially drawn toward music, and that those who are studying some instrument are allowed to substitute music for some other part of their school work. It also presupposes a teacher capable of teaching all the instruments well in classes and also capable of leading the orchestra. The ideal plan would be to put all these beginners in orchestral instruments into an orchestra that meets every day, and in this daily lesson everything needed for the progress of every pupil is taught, and certain work given each pupil to take home and study. This of course is a very high ideal and very few school systems can manage this at present, but it should be held up as an ideal to be striven for. It will surely come in time and will come all the sooner if planned and worked for. It is true of music as well as any other form of school work that anything can be arranged in any school system when it has been proven possible and worth-while.

It may not always be well to have all the players meet every day in the full ensemble as there are certain technical difficulties that can best be coped with in less mixed groups. Some plan like this may be found advisable for all instrumental pupils: keep a certain hour daily free from other studies so that full ensembles may be called any day, or the program varied without disarranging the other school work.

Pupils will miss some of the other school work with this plan and various ways of reducing this to a minimum can be used. The first half hour in the morning or afternoon may be used for this; to complete the hour the musical pupils may come half an hour earlier. The last half hour at either session may be used and pupils may complete the hour by staying after school. They could also meet the last half of one period and the first of the next. This, of course, is wrong as it penalizes the musical students, but in the present state of mind of educators it is a good makeshift.

Losing some of the regular work of the school is not so serious a matter as might be supposed, as these young musicians are almost invariably above the average mentally, both naturally and as the effect of their musical training.

§69. Weekly Plan

Monday: string section, tryouts (see later). The music used need be only partly that used in orchestra ensemble. Technical exercises in bowing, etc., may be used, string ensemble music, and also music of various kinds that pupils can play at home as solos. This will keep them interested as they will have training in the various uses of their instruments.

Tuesday: full orchestra ensemble.

Wednesday: flexible, either wind, string or ensemble, or those who need extra help may be given special attention.

Thursday: wind section with the same variety of treatment as suggested above for the string class.

Friday: full ensemble.

With this plan each pupil will be in the class three times weekly and, when necessary, four times. The other one or two periods he can spend catching up on what he has missed in his other school work.

§70. Teachers

Now who shall teach this orchestral work? At present, people who can do all this are rare, but with the demand comes the supply. The logical person for this work in the grade schools is the kindergarten teacher. Her hours are shorter and she has to be something of a musician anyway, and so it is a comparatively easy thing for her to prepare herself to do this work. Many are now doing so. They should, of course, receive extra pay. Then too, their rooms are free more often than are other rooms and in the present crowded conditions in most schools this is an item.

Where one person cannot do all this work it is always advisable to have some teacher take the ensemble in each building so that she will be

on hand when the orchestra is needed for a program. A visiting string teacher may then take the string class and a wind instrument teacher take the wind class. The fact is, however, that instrumental teaching is not so difficult as it sounds, and a teacher with a little start can soon train herself to do good work with beginners on all the instruments. This has already been proved time and again. In fact, numbers of teachers have fitted themselves for this by using the *Universal Teacher* by themselves There is no mystery about it, it is simply work.

Many of the pupils will want to take private lessons. This should not be discouraged and those who take private lessons either may or may not be excused from the class lesson as the leader's judgment may dictate, but in any case when several teachers work with the same pupil the work should be harmonious and planned to fit and not fight.

When there are eight grades in a building it will be well to have two orchestras, one for the first six grades and another for the seventh and eighth. This latter orchestra should follow the plan for junior high orchestra. With the two orchestras in the eight-grade building the line need not be drawn exactly as to grade, but ability should determine which orchestra the pupil should enter.

§71. Junior High School Orchestras

Here surely should the orchestra meet every day. With the larger organization, flexibility of program and duplication of classes, the work of programming is easy. The principal should put the orchestra at a period in which only classes with duplicates are held.

There should be two orchestras in every junior high school. While it is true as a general thing that any one who is going to do anything worth while in instrumental music should have begun long before the seventh grade, there are exceptions, and another use for music must not be forgotten: the good use for leisure time. The gang spirit is rampant here, and it is at this stage that life gets its slant for good or evil. It is here in the junior high school that music should step in and do its share toward the uplift of the human race. To put it in a few words, the boy or girl who is learning one of the "sociable" instruments (this means an orchestra or band instrument) has little time for mischief of any sort. So the more musical organizations of all kinds here, the better. Arithmetic may suffer, but who ever heard of an arithmetic club that rehearsed evenings and "recited out"? The orchestra does that. There is no need of enlarging on what music can do here. We all know it, but it remains to get to work and to do it.

There should be in every junior high a well trained and efficient instrumental teacher: one who can inspire his pupils and make music popular.

§72. First Orchestra

This should be a close organization and perfect of its kind. The standard of performance and the standard of music performed should be

as high as possible. Nothing succeeds like success, and as soon as possible the standard should be set for this orchestra. A certain instrumentation and a certain ability and a certain number of players in each section should be set and adhered to. All the others should go into the second orchestra, and promotions should be made only as vacancies occur in the first organization. The second orchestra is the place where pupils can be induced to take up instruments needed or apt to be needed in the first orchestra.

Pupils should be encouraged to take private lessons or enter advanced classes in instrumental music if any are available, and each orchestra rehearsal should be an advanced instrumental class if the leader understands the different instruments as he should. If he does not he should take pains to learn as rapidly as possible.

It will be well to follow the weekly rehearsal plan given in Chapter X, §69, with full ensemble on Wednesday more often than not, as the necessity for extra work with certain players will not be as pressing, especially in the first orchestra.

CHAPTER XI

§73. Symphony Orchestras in High Schools

THERE is, unfortunately, no standard for anything connected with school music, not even in the singing which has been in the schools for a hundred years, so it is not at all surprising that there is none in this new field of instrumental education. However, the symphony orchestra is a long established fact, and with this for an example every school system has a goal toward which to work.

The question may arise in the minds of some, "Is a symphony orchestra possible in any high school?" The answer is that there are a number of high school orchestras already in the field that are symphony orchestras with full instrumentation. For instance, at Richmond, Indiana, there has been a full symphony orchestra for a number of years. This orchestra has played many of the most difficult symphonies in a very creditable manner and has appeared twice before the National Music Supervisors Conference. This orchestra was recruited from a student body of eight hundred. Practically one of every eight pupils in the whole high school was playing in the symphony orchestra. The same thing can be done in any town where the leader has the patience and ability to develop it. The first step is the belief in this as an ideal toward which to work. With the symphony orchestra at the head of the orchestral system in the minds of leader and pupils there is a definite thing to work for and a definite goal to reach, and everything can be planned to this end.

It may seem that working toward a symphony orchestra may defeat one of the other objects of the orchestral system, that of playing simply for pleasure. The answer is: the better one plays the more fun it is. It is also a fact that if the whole music system is planned to equip pupils for professional playing those who are in it for fun are getting the highest degree of pleasure out of it the more nearly they approach professional perfection. So all are served.

In the senior high school there should be two orchestras; the first, the nearest approach possible to the symphony orchestra with full instrumentation, entrance to which is determined by ability and occurrence of vacancies. The second orchestra takes care of all other applicants, for it must be understood that we must not only accommodate all who want to play but also build up an ensemble as nearly perfect as possible so that the pupils can get training worth while in music itself.

If there is a junior and senior high school in the same building the organization of two orchestras in each may be changed to two for the

whole building, the best musicians in either school to go into the first or symphony orchestra.

§74. Relations to Other Subjects

It is a sad fact that in the minds of many, and this is not without foundation, that musicians are not well educated as a class, and that musical students are prone to neglect their other studies and put their time wholly on music. To counteract this it may be well to require a certain standard of attainment in other subjects as a condition for remaining in the orchestra. Not too high nor too inflexible a standard should be demanded, for one who is to be a fine musician has not the time nor the strength to be as proficient in all his other numerous subjects as the pupil who does not study music intensively. Nor is it fair to use a pupil's desire for music as a club to drive him to do the work of a less interesting subject or teacher. The unusually gifted music student is often so penalized for this gift that he has to decide to drop one or the other. Every supervisor of music sees cases of this kind on all sides. Good common sense should govern here, and if rules are made at all they should be administered flexibly to suit individual cases.

The senior high orchestras should of course meet in school time. Class lessons and ensemble playing should all be done in school time, and be a part of the regular school program. The time should be past when instrumental music, hitherto the Cinderella of school subjects, takes what is left over and fights for a precarious after-school existence with all the after-school interruptions, while the homelier and less useful elder sisters like grammar, arithmetic, etc. have all the advantages.

§75. Use of Emblems

Following the psychology of young people that a pin of some sort is a distinction as well as a decoration, the orchestra leader will find that a pin given by the orchestra management to members of the symphony orchestra for distinguished service, fine playing, perfect attendance, keeping up with other school subjects or a combination of these, or any other reasons previously agreed upon, will help keep up the morale and interest of his players. These pins should be earned by good hard work. The plan used at Richmond is here suggested. A bronze pin was awarded for one year's service, which was exchanged at the end of the second year for a silver pin, which was in turn exchanged for a gold one at the end of the third year. These pins are purchased by the orchestra management and awarded as distinguished service medals. No student is allowed to purchase or wear a pin that has not been earned.

§76. Weekly Program

The same weekly program should be used as suggested in Chapter X, §69.

Class lessons, private lessons, and technical training in the orchestra itself should all be a part of the work in the senior high orchestras the

same as in the others, and an all-round training for each student should be the goal. Students should be encouraged to form smaller organizations and run these themselves. Quartets of both wind and strings, and many other combinations and uses will suggest themselves. The "jazz" orchestra should not be discouraged.

§77. Where to Have Rehearsals

This is a most difficult question. The answer is, make the best use of what you have. No other teacher wants to teach a class where the orchestra can be heard practising. This is the first difficulty. The acoustics of the room is the second. Where there is an auditorium with a large stage the difficulty is solved at once for the stage of an auditorium is the ideal place for instrumental rehearsals. The space takes up the echoes and makes the music clearer to the players and the leader. Also when the pupils play in public they will be accustomed to the place, a most important consideration. Small rooms for rehearsal are very difficult for there are usually many distracting echoes.

§78. Seating Orchestras

The chairs and music stands should be set in place before the class convenes. An attendant or some student appointed for the purpose should set these. To facilitate this, the floor should be marked in some permanent way so that a chair may be placed on every mark of a certain kind and a music stand on every mark of another kind. These marks may be painted on the floor in two colors, so small that they will be inconspicuous enough not to mar the appearance of the floor, but these wear off in time and when the orchestra enlarges or shrinks they are difficult to change. Tacks of two kinds with conspicuous heads are better, as these may be moved as occasion demands.

§79. Attendance

The attendance should be taken by the secretary or other officer appointed. A seating plat with movable cards as suggested in *High School Music Teaching* is the best way to do it. No time should ever be taken to call the roll. The leader should never do it. His time is fully occupied otherwise.

§80. Credits

Orchestra work should receive school credits equal to any other subject according to the number of hours spent in class and in preparation. As a prepared subject the members should be required to practise six hours a week outside of school and take one private or class lesson a week in addition to the orchestra rehearsal. Part of the private study should be devoted to preparation of orchestra parts. Practice and lesson blanks should be provided and orchestra grades should be based upon the amount of preparation as well as the quality of work done in the orchestra class. The following blank is suggestive:

NOTICE:—This report must be filled out and promptly filed with the Supervisor of Music at the end of each period (5 weeks) if you wish credit for work done.

Ann Arbor Public Schools

ORCHESTRA STUDENT'S REPORT

Orchestra..... Instrument..... Student.....

Teacher..... Semester.....19..... Period.....

	1st week	2nd week	3rd week	4th week	5th week	Total
Lessons taken.....						
Lessons missed.....						
Excuse given*.....						
Lessons made up.....						
Grade given§.....						

*Good—fair—poor §A—Excellent, B—Very good, C—Good (average), D—Poor, F—Failure

NOTICE, PRIVATE MUSIC TEACHER:—In giving credit for the outside study of music you rank as a School Teacher and must comply with the rules of the School. Before giving a grade, examine the number of hours practised [see the reverse side of this report]. If the time is not indicated or fully made up you must give a lower grade than the one you had in mind. At the end of each five weeks, before you O. K. this report, see that parent's name appears. All lessons missed without a good excuse must be made up. Report any irregularity to the Music Department.

(OVER) .....Teacher

[Front]

No credit should be given instrumental pupils who do not play in the orchestra if they can play well enough to enter an orchestra of some kind. There is often a feeling among private teachers and pupils that orchestra playing is a poor thing to do and some very good players do not enter the orchestras. It has been the custom for some time in Minneapolis to allow the best player on some orchestral instrument to appear as soloist at the last Young People's Symphony Concert of each season. It is quite an honor to appear as soloist with the whole Minneapolis Symphony Orchestra playing the accompaniment, and it galvanizes into action the entire instrumental system. A cello player once captured the prize. A prominent teacher asked why that girl got the prize when he had a pupil who could play far better than the one chosen. "Your pupil was in no orchestra and so was ineligible," was the reply. Soon after that a number of fine players who had hitherto held aloof entered the various high school orchestras.

Let it here be stated that it is far harder to build up fine ensembles in large cities than it is in small ones, as there are so many distractions of all kinds in a large place that are lacking in the smaller towns.

Record of Time Spent in Home Practice

TIME REQUIRED:

1 hour per day (6 days).

DAY	1ST WEEK		2ND WEEK		3RD WEEK		4TH WEEK		5TH WEEK	
	Hour	Min.	Hour	Min.	Hour	Min.	Hour	Min.	Hour	Min.
Monday										
Tuesday										
Wednesday										
Thursday										
Friday										
Saturday										
Total Hours:										

To my knowledge the above is a correct statement of the time this student has spent in practice and time of practice has been marked upon this report DAILY.

Signed.....Parent

[Reverse]

These pupils who play well owe a duty to their school and should never be allowed to appear as soloists on any school program unless they have helped in the various ensembles. We rigidly enforce this rule in Minneapolis. It is also enforced with piano students who have not been willing or whose teachers have not been willing to have them help in the various capacities open to pianists in the schools.

§81. Officers

Every orchestra of any kind should have some organization with regularly elected officers and these should be responsible for the functioning of their various departments. Each section should have its principal to be determined by the tryouts. In addition, there should be a president or manager, a vice-president, or assistant manager, and most important of all, a librarian with one or two assistants and an efficiency manager. There should also be an assistant leader or two selected. This organization serves two purposes. The leader or teacher has his hands full with the teaching. Pupils need training in responsibility and here is an excellent chance for it.

§82. High School Orchestra Rules

The players in the Richmond orchestra compiled and adopted the following:

1. Order is Heaven's first law. It applies especially to orchestra practice.

2. (*a*) Every member must be in his place when the five-minute bell rings. (*b*) Take places quietly. Warm up in perfect silence.

3. (*a*) When the bell rings the concertmaster rises and takes the A from the oboe. This is the signal for principals of each string section to rise, take the A and tune their sections. Wind players arrange their music according to the program on the blackboard while the strings are tuning. All strings tune at the same time and stop as soon as they are in tune and give the winds a chance. (*b*) When strings have tuned, concertmaster sits, which is the signal for the first oboe player to rise, tune the wood-winds, then remain standing while the horns and brasses tune. String players arrange their music while the wind instruments are being tuned. When oboist sits the conductor rises and the rehearsal begins without a word.

4. (*a*) Watch position of instruments while playing. (*b*) Sit with both feet on the floor. Poise forward to breathe well. (*c*) All players must have uniform resting position for instruments. (*d*) All smaller instrument cases must be under chairs of players. It is the duty of the efficiency manager to report all cases of poor position and disorderly conduct.[1]

5. (*a*) Do not notice mistakes of others in rehearsal or concert. (*b*) No visiting or practicing during rehearsal or concert. Reason: an ear that is not delicate enough to dislike other sounds during music will never make a first-class musician.

6. Anyone wishing to speak during rehearsal must rise and address the presiding officer or conductor.

7. (*a*) All eyes must be on the conductor. (*b*) Stop playing instantly when you hear three taps or when the baton stops. (*c*) Instruments must be in position ready to play when you hear two taps or when the conductor raises his baton, or when he speaks.

8. Between pieces: (*a*) Get next piece ready. (*b*) Tune quietly if tuning is necessary. (*c*) Be ready to start on signal.

9. Failure to comply with the above rules will be punished by suspension from the orchestra. Readmission will be granted only by written order from the principal.

10. (*a*) Auditorium shall be closed to everyone except members of the orchestra during sectional rehearsals. (*b*) Parents and teachers may visit sectional rehearsals by permission only. Listeners are admitted to all other rehearsals provided they are perfectly quiet. (*c*) Players are admitted by examination only. All members must take at least one lesson a week and practise six hours weekly outside of class.

[1]The orchestra is organized with a President, Secretary, Librarian and Assistant Librarian. Librarian takes care of the music. Assistant places books and music before rehearsals and concerts. Efficiency officer is appointed by the conductor.

Attendance is taken daily by secretary during rehearsal. Secretary collects excuses and grants passes.

All bowings and phrasings must be marked by the third day after the first reading. Principals of sections are held responsible for their sections in marking and in conduct.

Tryouts are held every two weeks at which time promotions are made in accordance with ability shown.

§83. Membership

The membership in the first orchestra in any school should be limited in some way and entrance to this made a trifle hard or it will not be prized. Human nature is such that what is free and easy is seldom valued.

The membership of any first orchestra should be filled as soon and as well as possible and the number should remain constant until vacancies occur for any reason. For instance, if the number of first violins in the symphony orchestra is twenty, this number should never be increased or diminished, but used as a spur to all the other violinists clear down the line through the six-grade orchestra to stiffen their work. Let it be known that but twenty players can play first violin in the symphony orchestra and these must be of the very best quality, and a chair in this section of the symphony orchestra becomes a prize to be worked for from the beginning. It is also a powerful weapon to use to drive violin players into other sections.

It may be well to have an extra member of each section sit in at rehearsals so he will be able to fill in at a concert in case of illness or absence from any other cause, but let it be distinctly understood that these extras are not regular members of the first orchestra but are merely understudies, who are to fill in as needed.

CHAPTER XII

§84. Balancing the Sections

THERE must be a certain balance of numbers of the different instruments to make a good ensemble or there will be no music worth while, and if there is no music no one gets any training worth while and the whole thing is a failure. Buying instruments and inducing pupils to play them has already been spoken of. Substitution of instruments, transposing or substituting music and transferring players to other instruments can all be resorted to to help balance up the orchestra until the proper instrumentation is achieved. These last topics will be taken up in the different sections later.

§85. Tuning Routine

When the class bell rings, tuning begins immediately, whether the conductor is in place or not. First oboe[1] sounds A; principal of each string section tunes, then passes among the players of his section, ascertaining that all have the correct pitch. Concertmaster remains standing until all strings have tuned. While the strings are tuning the wind players should have been breathing silently into their instruments to warm them so that they can be properly tuned. Then the concertmaster sits and first oboe player rises, sounds A to the first flute, who tunes his section, the clarinets, bassoons, horns and trumpets following in order. The principal of each section attends to the tuning of his section. First trumpet player then sounds C (B♭) for the trombones and tuba, after which the tuba sounds the proper tones for the timpani player, if necessary. When the timpani are tuned the oboe player sits, the conductor rises and the rehearsal begins without a word. Tuning should not require more than two minutes when the routine is established.

Young orchestras should tune as in the string and wind classes. Routine for strings: teacher sounds A on pitch pipe or piano. Pupils all sing *do* to this pitch, sustaining it while they pick the A string and turn the peg until the tone of the instrument matches the voices. Bass players touch the one-fourth mark on the A string and tune the resulting harmonic to the vocal tone, using the bow instead of picking the string. Each pupil stops picking his string as soon as it is in tune, but keeps sustaining the tone until all have tuned and ceased picking the strings.

[1]It has long been the custom to tune the orchestra to the oboe, but the tone of the oboe can be humored a good deal and so is unreliable. Some more stable medium for tuning should be used. The Deagan Studio Tuning Bar is suggested, or a tested tuning fork. A 440 is the pitch used by most symphony orchestras. This pitch has been adopted as the official pitch by the Music Supervisors National Conference, by manufacturers of pianos and wind instruments, and by musicians' unions.

When all the A strings are tuned, the pupils call the A *sol*, sing down to *do*, and tune the D strings the same way. When the D strings are all tuned, the pupils call D *sol* and sing down to *do* and tune the G strings. Violins and basses stop. Violas and cellos call G *sol*, sing up to *do*, and tune the C strings. Violas and cellos stop. Violins and basses pick A string, call it *do*, sing up to *sol* and tune E strings.

The wind instruments should use the band tuning given in Chapter XV, §§102, 103.

Later when the pupils have learned to distinguish perfect fifths as suggested in Chapter VII the violin, viola and cello players will tune their instruments in fifths by using the bow and sounding two strings together, eliminating the beats by turning the peg of one. The bass player tunes by unisons as follows: the pupil should measure the distance from the bridge to the nut and make a permanent mark across the finger-board exactly one third of the distance, and another mark exactly one fourth of the distance. These marks will be about four inches apart on the finger-board. Place the little finger of the left hand *lightly* on the one-third mark of the G string so as to produce a harmonic; draw the bow across the G string and turn the peg until the tone matches D, on the space below the G staff. Without removing the little finger from the one-third mark on the G string, place the index finger on the one-fourth mark of the D string, sound the two strings together and tune the D string until the two tones are exactly alike in pitch. Now slide the hand over to the D and A strings and repeat this tuning, next repeat with the A and E strings. These tunings are the ones which string artists of all kinds use and pupils should learn and use them as early as possible.

Another quick and simple tuning is widely used in orchestras containing young players. It consists of tuning all the strings to the corresponding tones of the piano and then sounding the piano tones for the different wind instruments. While this is a quick and simple way to do it, it is never accurate as the piano is never in tune and neither are instruments tuned in this way, and the players grow up with a careless attitude toward the most essential part of their education—intonation.

The leader should read and follow the suggestions about tuning to low pitch and humoring the tone, in Chapter XVIII, §118. The strings should tune by drawing the bow about an inch over the end of the finger-board, where the tone is softer and purer.

§86. Lesson Program

It is suggested that the teacher read about conducting a rehearsal in *Choral Technique and Interpretation* by Henry Coward.[1] This is a unique and practical treatise on conducting a rehearsal of any kind, though the author speaks particularly of choral work.

The program of the rehearsal should be placed on the blackboard before rehearsal time, also any announcements that may be necessary. The lesson program should be arranged as follows: (1) familiar selections; (2) sight reading; (3) unfinished work; (4) familiar selections.

[1]Published by Novello. (H. W. Gray & Co., N. Y., American agents.)

The greater part of the period should be spent in perfecting the unfinished work. The rehearsal should begin with familiar selections to give the players an opportunity to warm up and at the same time to experience the joy of playing some piece perfectly. The sight reading selections may be pieces to be learned later, and may be read through at several successive rehearsals before concentrated work is begun in perfecting the performance. The players should strive to read each new selection in tempo as perfectly as possible. When they are perfect readers they will be able to play the notes, expression, phrasing, everything at sight. This ideal should be constantly held up by the leader and constantly striven for by the players. It is discouraging to players to attempt to perfect a selection bit by bit until the selection has become somewhat familiar by subsequent readings of the work as a whole. After several readings of an entire work the players are sufficiently interested in the piece to appreciate the finer points of interpretation. The familiar selections at the close of the rehearsal serve to re-establish the confidence of the players and to send them to their next classes in a pleasant and buoyant frame of mind.

The lesson program should be so timed that the entire program is completed during the period. The director should time the various parts of the rehearsal to cover the four phases, or the players will become discouraged at the apparent lack of accomplishment.

§87. Metronome Marks

Most music carries a mark like this at the beginning of each piece: ♩ = 60. This means that the music is to be played at the rate of sixty quarter-notes a minute. There are various kinds of metronomes on the market and the leader who wishes to interpret the music according to the composers' wishes will do well to consult his metronome for the desired speed. Metronomes are awkward to carry around. It is also difficult to remember the speeds called for by a selection. A handy little metronome that may be carried in the pocket is in the form of a tape measure that can be pulled out to any number and then held in the hand and used as a pendulum to determine the speed. A common spring tape measure can be quickly made into a metronome by marking the numbers on the back of the tape. To get these markings use a common metronome to set the time and then pull out the tape measure until it swings in the time of the metronome and mark that number on the back of the tape measure. Sticking a pin through the tape at the number needed will keep a common tape measure from coiling up while being used as a pendulum.

CHAPTER XIII

§88. Phrasing

MOST professional orchestras show laxity in phrasing perfection and it is the duty of every orchestra leader to teach his players how to phrase properly and see that they follow his instructions. For this purpose slow, lyric pieces are best adapted. Have the members provide themselves with blue or red pencils and have them mark breathing places and expression marks clearly in every piece they study. In some cases it is necessary for the conductor to indicate the phrases and he should study his scores and pencil them out so he may instruct the players in uniform methods.

Generally the higher tones are played with slightly more power than the lower tones. By following this rule and observing all natural accents the players will acquire a musical sense that will enable them to interpret the ideas of the composers. All unexpected expression marks should be underlined in red until the players learn to observe every symbol at first reading. The best way for the players to acquire good phrasing habits is for them to play songs. The *Universal Teacher* contains over forty songs in three parts so arranged that any three players of like or unlike instruments may play trios. This material is ample for the above purpose and is also useful in developing pure intonation. The leader should also keep in mind the suggestions on phrasing in Chapter VIII, §44, and drill his players in accordance with them.

§89. Balance

In an orchestra of seventy-five players one will find just seventy-five different ideas of the exact degree of loudness which is called for by a double *forte*, or a *pianissimo*. If the question of balance rested entirely with the conductor he would need seventy-five hands to maintain the proper balance of parts at all times. The conductor may guide the players in a general way, but it is the individual players themselves who must gauge their volume to fit the ensemble. This is possible only when the players hear each other; when every player listens to what every other player is doing all the time. The best way to secure this attention is to stop and hold chords occasionally while the players listen to the balance and regulate their volume accordingly.

§90. Intonation

Balance and intonation go hand in hand. Work for one and you get both without fail, for the necessary requisites are the same. Your

players must learn to listen to the other players all of the time. When they have learned this there is no more trouble on either score. Most orchestra music travels too fast to enable the amateur player's ear to catch and analyze every chord he hears. As a preliminary to better listening, chord playing is suggested as the means of starting the players on the right road. Full directions for this with many series of chords will be found in Part Four.

§91. Playing Without a Conductor

Playing without a conductor is the best way for an orchestra to practise balance and intonation. Beginning with well-known pieces in strict rhythm the orchestra should acquire skill enough to play any piece in the repertoire without a conductor and keep together almost if not quite as well. When the Richmond High School Orchestra played the Finale of Tschaikowsky's *Symphonie Pathétique* without a conductor before the National Conference of Music Supervisors at Cincinnati in 1924 it opened the way to a new phase of instruction for orchestras everywhere.

§92. Individual Work

Individual work in orchestra playing is just as essential as individual singing is in the vocal ensembles. A pupil practises his instrument by himself more than he sings alone, but it is very necessary that he learn to carry his part alone against the other instruments playing other parts. Individual work is hard to plan, owing to the differing numbers of instruments of the different kinds, but the growth of ability on the part of the students well repays the trouble of organizing and carrying it on.

§93. Junior Orchestras and Instrumental Classes

It is well to put the best players in the back seats. The usual plan of putting the best players in front and the poorer ones in the rear is all very well for ensemble but it is not a good educational policy. The problem is exactly similar to the one in the singing class. The poor player should be in front where the leader can help him. He should be helped by the better tone of the better player behind him. He should not hinder the advancement of the better player who would have to listen to the poorer playing behind him where he would hear it more plainly. When doing single individual work begin at the back and follow down the line, each pupil playing a portion.

Divide the orchestra into groups, one instrument on a part, and allow the first group of players to play phrases, measures, or whatever the unit agreed upon, and then if it is right, have all the rest of the orchestra play this unit to signify to the teacher that it was played correctly. This makes the listening players very keenly interested and discriminating.

If the first group does not play it correctly the second group plays the same section and then the third. Each group should start in time

without signal from the teacher, who should not beat time nor in any way assist the pupils. If three groups do not play it correctly the whole orchestra should play it and the fourth group should take up the next section.

Rightly organized and carried on, individual work is very useful in all stages of instrumental playing. Playing before the rest of the class, promotion or demotion of places in the line, etc.—all make for enthusiastic progress for all concerned. For further suggestions the reader is referred to the chapter on Individual Work in *Grade School Music Teaching* by T. P. Giddings.

The string section is the backbone of any orchestra and its development and balance is one of the most important and difficult problems that confront the leader. The following suggestions are of universal application and will be found useful at any stage in the development of any orchestra.

§94. Balancing the String Section

An orchestra is not an orchestra unless it has a well-balanced string section and it is the first concern of the teacher to secure this balance. The understood and accepted method of doing this is to transfer surplus violin players to the violas, cellos and basses. This plan works in theory only, for the "surplus" violin players are usually the unmusical ones who are useless in any section. No student will take up the study of double bass of his own accord. It is necessary to force the students to take up these instruments at first, then there is no difficulty in keeping them at it if interesting music is provided for them to play.

Divide the applicants between violin and viola, selecting those with strong hands and long fingers for violas, including one or two of the best players applying. Viola players are ranked equal to second violin players and should be promoted at the end of one or two years into the first violin section, never from viola to second violin, as that would indicate that the viola was inferior to second violin. Promise the players this promotion if they make good as viola players. Require the newly appointed viola players to take one lesson on the viola to learn about the alto clef, then permit them to continue studying violin and give them the same credit for violin practice and lessons as though they were studying viola, for the technic is exactly the same. Tell them that viola practice will help their violin playing, for it strengthens their fingers and broadens their tone. Some violin teachers still claim that viola playing injures violin technique—this is entirely erroneous. A former teacher of one of the authors was once principal viola with the Boston Symphony Orchestra. While in this position he appeared as violin soloist with this organization. Later he became assistant concertmaster of the Minneapolis Symphony Orchestra, meanwhile playing viola in a famous string quartet and appearing as viola soloist with this orchestra. He maintains that viola playing increased his tone and technic to such an extent that he practised his violin solos on the viola first, then when he played them on his violin they seemed much easier. The problem of intonation rests entirely with

the ear of the player and viola playing is a distinct benefit to all violinists, besides opening the field of string quartet playing to them. Reading the alto clef is a simple matter and any intelligent student will be thoroughly at home with this clef in a short time if allowed to enter the orchestra the day the viola is placed in his hands. On the other hand, if a student is asked to study viola for several weeks or months before entering the orchestra the chances are that he will give up before he enters.

The secret of success in transferring players to other instruments is in putting them in the orchestra before they have a chance to become discouraged. This is more necessary with bass and cello than with any other instruments, for there is too little pleasing material within the technical ability of a beginner to interest the student in these instruments.

It may be necessary to transfer violin players to the cello in some instances, although the difference between these instruments is much greater than that between violin and viola. It is almost as well to select good pianists to take up cello and bass, or even good singers who are also good readers. The greatest difficulty is in getting one player well started on each of these instruments. Once that is done it is a very simple matter to complete the sections, placing a beginner beside a seasoned player, to learn from his superior.

It is also a difficult matter to induce students to take private lessons on double bass for they usually express a willingness to take lessons on any solo instrument but never on an instrument that is useless except in an orchestra. After a student has played bass in the orchestra for a few months he will become sufficiently interested to want to take private lessons, so it is wise to give these players a six month's trial without requiring them to take lessons, then give them the opportunity of earning more credit by studying privately. If these students happen to be piano students it is a fair compromise to allow them credit for private lessons if they take one bass lesson every two weeks and practise thirty minutes a day in addition to one piano lesson a week and six hours a week of practice. Cello players cannot advance fast enough with a lesson every two weeks, so this plan should be limited to bass students. Once a bass player has become partially seasoned in an orchestra he will not exchange places with the concertmaster, for he feels the importance of being the foundation of the orchestra, and there is an uncanny satisfaction about it that surpasses the joy of playing the melody most of the time. Of course, the music selected must have a bass part that is interesting to play, and that has an occasional solo passage for these instruments. As soon as the violas, cellos and basses are fairly represented in the orchestra the piano must be dispensed with, for the effect of having all the important bass, cello and viola solos hammered out on the piano discourages the players of these instruments, for it takes away the few chances they have to assume prominence. It is a very good plan to start a string ensemble as the means of encouraging the players of the lower stringed instruments, using easy material arranged for the particular combination of instruments, or using the string books of the *Willis Graded School Orchestra and Band Series*, Volumes One, Two and Three, which are arranged with

the melody distributed among these instruments. If these books are used there should be three violins to one each of the other instruments; the music will sound complete even if one or two instruments are missing.

§95. Assignment of Parts

Orchestra leaders often experience difficulty in properly classifying the violin players into firsts and seconds. The following plan will produce the best results in the symphony or other first orchestras if followed closely: supposing there are twenty-two violinists, classified as to ability from No. 1 (best) to No. 22 (poorest), they should be placed as follows:

1 and 2; first violin, first desk.
3 and 4; first violin, second desk.
5 and 6; second violin, first desk.
7 and 8; second violin, second desk.
9 and 10; first violin, third desk.
11 and 12; first violin, fourth desk.
13 and 14; second violin, third desk.
15 and 16; first violin, fifth desk.
17 and 18; first violin, sixth desk.
19 and 20; second violin, fourth desk.
21 and 22; second violin, fifth desk.

As far as practicable assign freshmen and sophomores to second violin and juniors and seniors to first violin. New arrivals should always serve a semester or two on second violin or viola no matter how well they play. It may be necessary occasionally to move players from first violin to second in order to provide leaders for that section. Promotions from second to first violin should be made only at the beginning of the school year, for it is far better to keep the same players on the same parts throughout the year. The members should understand that the players at the first two or three desks in the second violin section are higher in rank than those at the last three or four desks in the first violin section. In selecting a small orchestra for stated occasions choose an equal number of players from the first and second violin sections, even if better players are omitted. At least one string quartet or quintet should be maintained, consisting of the first chair players in each of the string sections, including bass, even if it is necessary to write special parts for this instrument.

One of the authors once made the mistake of selecting the concertmaster for the year, regardless of competition, believing that the position required the services of a leader strong enough in character to dominate the section. It is far better to place every position on a competitive basis, then move the players back in case of lack of ability in leadership, always with the privilege of winning back the seat at the next competition and of having a new trial at leadership. There is no better way to develop leadership and responsibility although, of course, the ability to play is more necessary than the ability to govern a section of the orchestra. This same plan or a modification of it should be followed in the other orchestras of whatever grade.

§96. Sectional Rehearsals; Routine for Tryouts

The success of the orchestra depends upon the efficient conduct of the sectional rehearsals, which should consist largely of individual playing.

A selection or exercise is assigned by the director a week in advance and the players are given the opportunity of taking the music home for practice, those at each desk arranging for the use of the music on alternate days. When the rehearsal starts the conductor selects a phrase or passage from the assigned piece or exercise for the first violins, who first play the passage in unison, then individually, beginning with the concert-master. This is strictly a contest and the members present are the judges. As soon as one player plays the passage better than the player preceding all hands go up and the players exchange seats immediately. In case of doubt the conductor decides. The conductor reserves the right of veto in case of prejudice which often occurs among students. The same routine is followed throughout the second violin, viola, cello and bass sections, after which the entire selection is played by the entire group. The rest of the period, if any, is taken up in rehearsing in ensemble for phrasing, attack, intonation, etc.

This spirit of competition is the strongest incentive we can appeal to and it will instil more ambition than any other device. The loss of a seat soon becomes a very serious matter. Staying away from school on sectional rehearsal days can be stopped by a ruling that members absent on such a day are automatically moved down a seat. No member of the orchestra should escape the competition for any reason unless he is satisfied to take the inferior position and keep it. Weak hearts, sick grandmothers, timidity—all sorts of excuses are bound to crop up, and must be squelched by a rigid rule. Ability and work alone must count and every member should be privileged to hold his seat just so long as his merit permits, or the system will be a failure. If this routine is followed strictly progress will be astounding and the interest in orchestra work increased beyond all dreams.

The concert-mistress once lost her place in a tryout. After ascertaining the assignment for the next tryout, she stayed away from school for a week, with the consent of her parents, and practised nine hours a day to win back her place at the next tryout. Needless to say she won it and did not lose it again that year.

These tryouts are excellent for orchestras of all ages and stages of development. It is not always necessary to assign some piece for a tryout. One of the criticisms often leveled at the school orchestra and class instruction is that the pupils do not do technical exercises enough. By assigning a series of technical exercises to the students for the next tryout, much technical training can be secured. For instance, a pupil who cannot be induced to practise monotonous but valuable bowing exercises for the private teacher will grind away at them for hours when a seat in the orchestra is at stake.

This same principle can and should be applied to the instrumental classes. When they are using the *Universal Teacher* the individual work takes care of that, and in either class the pupils should sit where their ability places them. This is true of both string and wind classes.

In the younger orchestras that meet but once a week the tryout should be a part of every alternate rehearsal and done in a quick and systematic manner.

§97. Bowing

One of the most vital items of orchestral technique is correct use of the bow by stringed instrument players. Many of the bowings commonly used in orchestral playing are not used much in solo playing, and consequently are not emphasized by private teachers. It is almost necessary to teach bowing in the orchestra, especially if the bowing is to be uniform, and without uniform bowing the tone quality will be poor; besides the orchestra is the best and easiest place to teach bowing, for the spirit of competition furnishes the incentive for practice on what would otherwise be neglected and termed uninteresting. By including one bowing exercise in each week's assignment for sectional rehearsal, to be played individually in competition, the bowing of the entire string section will improve a hundred per cent. in a few weeks. All of the important orchestral bowings with exercises are given in the pupil's books. Directions for teaching these will be found in Part Four of this book.

Bowing can be taught much better in the orchestra than by private lessons. One of the authors once experienced considerable difficulty in getting his players to bow properly. A consultation with some of the teachers of the community revealed the fact that these teachers had given up trying to teach bowing because the pupils refused to practise the bowing exercises assigned. The teachers gladly accepted the author's offer to assist. The next week every string player in his orchestra went home with a bowing exercise to practise for the next tryout.

Many of the private teachers thought the leader was butting into their business. One girl piped up at the tryout with "My teacher said I needn't practise with a book under my arm." "Use your own judgment" was the leader's reply. This girl lost four seats at this tryout and there was a wholesale shifting of seats on the part of the string players. For the next few days the parents and teachers were divided into two camps, the first favoring the experiment, the second quite otherwise.

Another bowing exercise was assigned for the next tryout and parents and teachers invited to attend. This interested audience quickly saw the point in the eagerness with which the pupils competed for seats. Thereafter the parents and teachers gave their heartiest support, for they saw that the orchestra leader had succeeded where they had failed. The teachers went even further and brought their troubles to the leader, who gladly assigned the troublesome problems for tryouts. In this way the responsibility for the technical training was shared by the orchestra leader, who saw to it that the pupils practised what the teachers taught them.

§98. The Wind Section

Reference to the instrumentation tables of the various orchestras in Chapter VI will tell how many wind instruments to use. How to teach the wind instruments, how to develop the wind sections, how to transfer players from one wind instrument to another will be found in Chapter XVI and need not be anticipated here. Exercises for each wind instrument will be found in the students' book for each instrument. How to teach these exercises will be found in Part Four.

The preceding paragraph will also apply to the percussion section.

PART THREE:

THE BAND

CHAPTER XIV

§99. Function of the Band

THE BAND is more easily and quickly developed than the orchestra, and is a very attractive medium for musical expression. Its music is so lively and inspiring, the uniforms so spectacular, its general usefulness so great that it is enthusiastically supported by the student body and the public and often overshadows the orchestra.

This rather flashy usefulness of the band, and the ease of first development has blinded us somewhat to the possibilities of its greater development. Travelling concert bands under famous conductors have given a hint of what can be done with a fine band. Even these have by no means approached the limits of the possibilities of the wind band as a medium of musical expression. They are commercial organizations, and as such, have to cater to a rather low public ideal.

The band is capable of a development similar to the symphony orchestra and in certain ways the music of the band is superior to that of an orchestra of any kind. Sustained organ-like effects of great power and loveliness are possible as from no other musical means, to state but one of the unique effects of which this type of organization is capable.

There are several reasons for this lack of development. The principal one is that the schools are the only places where this can be done, and supervisors have not had a high enough ideal, as they too often follow the supposed notions of young people. Students of high school age are just the ones to revel in the higher types of orchestra or band music when they have developed enough to perform them.

It will be a fine thing for schools to go further in this movement than they have, for here is the easiest, most attractive form of music, and they are already well started. There remains but to develop it further, just as the orchestras are being perfected with astonishing rapidity. There will be no conflict between the two organizations as they occupy a different field and a friendly rivalry will be healthy for both.

Another reason for the lack of development of the band is the kind and the limited amount of material available. There is comparatively little material of the better sort arranged in an attractive manner for the wind band. Most of the material is inferior to that available for the

beginning orchestras in that it gives the tune to one or two instruments and only allows the rest to play uninteresting afterbeats. This type of music will never give the players well-rounded training in music for it stresses rhythm and melody unduly, and minimizes the noblest, least understood and most enjoyable part of music: harmony.

§100. Standardization

Band instrumentation has never been standardized, so there has never been an ideal organization toward which to strive. Any group of instruments is called a band and until there is some settled standard to work for and grow up to, there will never be the development of the band that there should be. Military bands, jazz bands, combinations of bands and orchestras, all these combinations of instruments are attractive and useful, but they emphasize the fact that there is no standard.

The *Universal Teacher* makes possible the beginning of better things for bands as well as orchestras by supplying attractive and easy beginnings for all the instruments of both. The Willis books carry on the work with harmony stressed in every piece; pupils are brought up in an atmosphere of well-balanced music and the rich harmonization of the pieces allows them to develop a well-proportioned harmonic sense.

The first three Willis books do this for the orchestra. These with the five added books carry on this idea with bands. The third and succeeding band books of this series are wholly variant from the orchestra books and mark the beginning of the fully developed concert band that will parallel the development of the orchestra.

If music is to fulfill its true mission in the schools, and if all the boys who should be tooting horns instead of shooting craps are going to be kept busy, a system of bands is very necessary to accommodate the many pupils. Such a system of bands, similar to the orchestras, headed by a fine symphonic band, should be developed in every school system.

§101. Organization

It is questionable whether bands should be organized in the six-grade buildings. The orchestra should be stressed here to give it the needed start ahead of the more easily developed band. Pupils can play stringed instruments earlier than they can the larger wind instruments that balance up a band.

The wind instrument classes should be stressed in the sixth grade and the band should be organized in the seventh.

A band should be organized in the eight-grade buildings. It is better for each building to have its own band, rather than to have a central organization, as smaller organizations make for efficiency, and the time it takes to go from one building to another is a detrimental factor. If rehearsals are held out of school time many pupils who should be in the band will be unable to attend.

The organization of bands in the Junior and Senior High Schools should parallel that of the orchestras in the same schools (see Chap. X.)

For instrumentation of bands of different kinds see Chapter VI.

For number and times of rehearsal see Chapter X. Divide the band into two sections, the reed instruments in one section and the brass and percussion in the other. Then use the weekly plan as given in §69. The matter of attendance will be found in §79; credits in §80. For information concerning officers, rules of conduct, etc. see §§81-83. The first clarinetist is the concertmaster of the band. Every section of the band has a principal the same as an orchestra has. The band leader should follow the hints on the lesson program in §86; phrasing, §§44, 88; intonation, §§35, 90; individual work, §92. All these apply with equal force to the band and need not be repeated. Sectional rehearsals of the band should be held similar to the ones suggested in §96. Divide the band as above into two sections, one for reeds, and another for the brass and percussion. When there is but one player on a part and several in the same section, all may use an exercise on the tryout. When a part of the piece is used as a tryout the player of a lower part may challenge his superior and compete for place by each playing the music assigned, and even though the music is different, promotions may be made according to the quality of the playing, the players deciding as usual.

The band leader should read and follow the suggestions on seating to be found in §§50, 51, 78.

With this plan it is simple and easy to apply the tryout to the band, where it is just as effective as in the orchestra, for in this organization several sections consist of three or more instruments.

CHAPTER XV

§102. Tuning

THE TEACHER sounds B♭ from the pitch-pipe or piano, the players matching that tone using the fingering given below and moving crooks as given in Chapter III of *Building the School Orchestra*, by R. N. Carr. The teacher goes about the class, helping when needed. Then all hold B♭ and perfect the tuning by eliminating any beats that may show, as suggested in Chapter VII. At intervals during the lesson the teacher should tap once as suggested in §41 and the players should hold the tone and test their tuning. Pupils should constantly strive for perfect intonation from the very beginning. The leader should read and follow the suggestions as to humoring the tone and tuning to the pitch of the lowest instrument found in Chapter XVIII, §118.

§103. Fingering for Tuning

Trombone, first position (slide in).
All B♭ brass valve instruments, open (no valves down).
All E♭ brass valve instruments, open.
French horn in F, first valve down.
B♭ clarinets and bass clarinets, three fingers and thumb down.
E♭ saxophones, three fingers down
Oboe, C saxophone, Meyer system flute, two fingers and key down.
Boehm flute, one finger and thumb down on B♭ Key. (1–)
D♭ piccolo, two fingers down.
B♭ saxophone, second finger down.
Bassoon and English horn, five fingers and key down.
E♭ clarinets and alto clarinet, open.
Sarrusophones, same as saxophones.
Tune to the lowest pitched instrument and then all others can tune down if necessary.

§104. Securing Band Balance

Without balance the band is ineffective, and no one gets full value for the time spent in it. There are two ways to secure this necessary balance: (1) the long distance one of raising the right number and kind of players; this takes a lot of time, but every leader should begin this at the very bottom and keep it in mind all the time. (2) The short distance way of taking all the players available and getting as good a balance as possible at once. There are few well-balanced bands because

the leader is apt to work only on this latter plan and neglect the former. Both should be worked at continually.

We will begin with the second and shorter way. We must, of course, give every one a chance, but we must also see that every one uses his chance so that all get the best out of the work.

Some standard must be in the mind of the supervisor or leader as he gathers all the players into a band for the first time. We will suppose this is a senior high school. Refer to the table of instruments for the ideal high school symphonic band on page 23; a band with this instrumentation can play any sort of music and should be the ideal in the mind of the leader. The membership in this band should finally be limited to the very best players only, but at first there should be some concessions. The quickest way is to treat each part as a separate unit clear down the line. For example, suppose a number of saxophones present themselves. Needing one soprano saxophone, the best one should be selected and put in the band. The rest of the players of the soprano saxophone may take their choice; either change to some other instrument or go into the second band where all may play without regard to balance. Let it be known all through the high school and in the tributary grade schools that but one soprano saxophone can be used in the best band toward which all are striving, and the beginners on saxophones will take warning and begin to study something that will give them a chance to get into the best organization. This will give a fine impetus to both plans suggested above.

As another example, let us take the cornets. There will be many applicants, as next to the saxophone the cornet is the most popular instrument. The four best of these should be placed in the first band and the rest of them given their choice between going into the second band or changing to another instrument and going into the first. Let it also be known throughout the system of bands that but four cornets can enter the first band, and pupils contemplating cornet study will consider their chances and select the instrument to be played with more care than usual.

Supposing one of the disappointed cornet players decides to get a French horn. He should be put into the first band at once and the fact announced through the whole system, that when a pupil takes up a new instrument he can rise clear to the top if there is no competition on that instrument. On the other hand, the more instruments of a kind the keener the competition and the better player one must be to hold his place. It may be thought that placing a green player in the best band will hurt the ensemble. It will for a time, but it is perfectly amazing how rapidly a youngster can learn anything when the proper motive is placed before him.[1] The new player will strive manfully to bring himself to the level

[1]When the Richmond High School Orchestra went to Nashville to play at the Music Supervisors Conference they played the overture to *Rienzi*. Six weeks before this the orchestra lacked a tuba player, so necessary to the success of this piece. A bright boy who was not a musician was asked if he would like to go to Nashville. He, thinking that he was needed to hustle baggage, joyfully answered, "Yes." He was then handed a tuba and a copy of the music to the *Rienzi* overture with the promise that if he learned to play it in three weeks he would be taken on the trip and made a permanent member of the orchestra. He did it. Many of the supervisors remarked on the excellence of the brass section. He is now on tour with a famous syncopation orchestra. Young people can do wonders when a vital motive moves them.

of the rest of the band. At first he should not be allowed to play very much when the band appears in public, but he should always appear with them and play the few notes that he can play correctly.

All players in all classes of instruments should understand that promotion depends upon three things: ability, conduct, vacancies. Demotion depends upon the same. With this double plan of organization, crosswise and up and down, the competition will be keen and transfers from one instrument to another will seem logical and will be easily made. To make this effective the leader must have a certain sized and definitely balanced ensemble in mind to begin with, and then stick to it until it becomes a definite result. This takes time and he is often tempted to make concessions here and there, but this is always fatal. Carrying out this plan may result in temporary hardship to a few, but the final result will well repay any of these temporary difficulties, and there is always the second band with its unlimited membership. This same plan should be worked in all Junior High Schools and eight-grade buildings.

The membership in the upper band should be limited strictly: first as to number, and then quality. It is a good plan to have an extra player on each part who rehearses with the first band, and stands ready to fill in when someone cannot be present for any reason. These extra players may or may not be members of the second band. They may play with the band in the *tutti* passages and be ready to play the solo passages when necessary. It is well to look forward to graduation time and to be training enough of these understudies to keep the band full.

It should be remembered that the quality of the performance of this first band must be constantly perfected, for if the quality does not improve the motive for joining the band is lost, and the whole system is a failure. The whole scheme is closely related to tryouts (§96).

CHAPTER XVI

§105. Developing the Brass Section

IT IS possible for a player to play equally well on two or more wind instruments without spoiling his embouchure for either, providing he practises both instruments regularly. We once knew a fine horn player who was also an excellent flutist and oboeist. Another acquaintance is equally a virtuoso on flute and saxophone. It is well to keep this fact in mind when endeavoring to transfer saxophone players to oboes and bassoons, for they are usually willing to submit to your desires providing they may keep up their saxophone playing for pleasure. In most cases they soon transfer their affections to the symphonic instrument and the saxophone is laid away except for occasional parties or special functions.

§106. Substitutions

The following list of substitutions will be of great help to leaders who are working with poorly balanced bands or orchestras:

Baritone, trombone, tenor horn, bassoon, E♭ saxophone and alto clarinet may play the music of cello, bass, bassoon, tuba, E♭ alto, or vice versa.

Any E♭ instrument may play music written in the F (bass) clef by reading as G (so-called "treble") clef and adding three sharps or subtracting three flats, or, any instrument using the F clef may play music for any E♭ instrument written in the G clef by reading F clef and adding three flats or subtracting three sharps. While the music of all the above instruments is interchangeable the trombone would need to play the lowest notes of the tuba an octave higher, and the tuba would play the upper notes of the trombone or bassoon an octave lower.

Flute, oboe, and C saxophone may play violin music and vice versa. B♭ clarinet and B♭ saxophone may play cornet music or vice versa.

The most appropriate substitutions are as follows:

Baritone or tenor horn plays cello or trombone music. E♭ baritone saxophone plays cello, trombone, bass or bassoon music. E♭ alto saxophone plays E♭ alto music. Tuba plays bass music which should be played an octave lower than written. Alto saxophone plays alto clarinet parts.

§107. Transfers to Other Instruments

The cornet is a very popular instrument and when organizing a band for the first time more players of this instrument are usually found than are needed. Cornet players readily master the French horn, trombone and tuba.

It must be remembered that all wind instruments are constructed along similar lines and that the most important phase of playing is proper breath control and true intonation. Students often select an instrument which is unsuited to their physical makeup, and it is well for the teacher to pass upon the selection and advise against choosing the wrong instrument.

Cornet players must have thin lips and even front teeth. The small cup of the mouthpiece will not admit thick lips. Sharp or uneven teeth, upper and lower teeth not in alignment would make playing painful in the extreme. Pupils with thick lips should be transferred to instruments with larger mouthpieces such as altos, trombones, baritones, or tubas, according to the thickness of the lips. All brass players need even front teeth except the tuba player, whose teeth are placed near the center of a mouthpiece large enough to obviate danger of injury to the lips.

The French horn differs from the other brass instruments in that the player uses the inner surface of his lips to produce the tone. A player with rather thick lips, and even front teeth, may become an excellent horn player though he would be an utter failure as a cornetist.

§108. Developing the Reed Section

Physical Requirements

A good whistler has excellent chances to become a good flutist. He should have even upper teeth and lips that are not subject to cracking or chapping.

Oboe and bassoon players should have fairly even teeth, for sharp front teeth would lacerate the lips in playing. Bassoon players need rather long fingers.

Clarinet and saxophone players need even lower teeth.

Transfers

The usual array of reed players available for a school band are saxophone and clarinet players. By careful selection and transfer these players will soon become efficient as performers on the less common instruments provided by the school. Saxophone players and surplus clarinet players can easily be transferred to oboe, bassoon and flute Select those who can whistle fluently for flute. For oboe and bassoon, select students who are mechanically inclined, for it takes a mechanic to keep these instruments in order and to trim and adjust reeds. It is always better to transfer players from other woodwind instruments to oboe and bassoon rather than start beginners on these instruments, for the multiple difficulties of reed adjustment are somewhat familiar to players of clarinet and saxophone, and the added reed troubles are not so discouraging to one who has experienced this trouble in a lesser degree.

§109. Playing in Both Orchestra and Band

Wind players should have practice in both orchestra and band when they play instruments common to both.

This can be done by a little planning. For instance, if there are nine clarinets in the band, three of them can be selected to serve a term of a few weeks in the orchestra, and then three others, and so on until all have had a chance. This is, of course, bad for the ensemble but we must not forget that our bands and orchestras are training schools for future musicians and while we must not unduly jeopardize the ensemble we must give these pupils as much training as possible. Later when we have raised the general musicianship of all the pupils the ensemble will finally be all the better for this temporary derangement. This is sometimes difficult to arrange as pupils all want to play in the band so as to be "in on all the fun." It can be arranged according to the following suggestion: the three clarinet players who play with the orchestra should be allowed to play with the band once a week and on all public occasions if they know the music.

§110. The Percussion Section

The best way to develop a percussion section in an amateur band is to dismiss all the drummers and call in four good pianists and teach them to play the percussion instruments. The reason for this is that most amateur drummers only want to make a noise and do not want to be bothered with reading music and keeping silent most of the time. Musicianship is as essential for a drummer as for a player of any other instrument, and most symphony orchestra drummers are excellent players on some other instrument as well.

The timpani player is the logical head of the percussion section. He should be given entire charge of the section with power to designate which player shall play triangle, bass drum, cymbals, tambourine, etc., on every occasion. A good pianist, either boy or girl, is the best choice for a timpani player. The greatest difficulty he will have is in learning to tune the drums at first. The only technical problem that requires practice is the "roll," which is very important and requires much practice. The timpani roll differs from that of the snare drum in that it is made with single strokes, while that of the snare drum is made with double strokes, each stick being allowed to rebound, striking the head twice with each movement of the hand.

Never allow the drummers to "fake." This is what most of them will do if one does not keep close watch on them. Have a separate player for each instrument to be played and never allow one player to play bass and snare drums together. The percussion section is where the pianists may have an opportunity to learn orchestral and band routine and they deserve the opportunity. Why rob them of the chance and submit to a faked drum part, which you are almost sure to get if you allow one player to play "traps"?

The percussion section is so flexible that a minimum of four players is usually necessary in an orchestra or band, although one or two do most of the playing. It becomes a problem what to do with the percussion players when they are not working. The best plan is to set them to playing some

other instrument. They may not be of much value to the band on clarinet, for instance, but they will be occupied and will be learning much without doing much harm to the ensemble. Double bass is about the best substitution for a drummer in the orchestra, for the basses play all of the time and they are located near the drum section so that the players would have little difficulty in getting from one section to the other when their services were needed. The timpani player alone is needed at his instrument practically all the time, and would find little time to play another instrument. For further discussion of percussion instruments see Part Four.

The Marching Band is discussed in Appendix C, page 211.

PART FOUR:
TECHNIQUE OF THE INSTRUMENTS

CHAPTER XVII

§111. Exercises, in General

PART Four is devoted to explanations and suggested uses of the books of technical exercises that are provided for each instrument. Before beginning the use of the exercise books the teacher should read the paragraphs about exercises in Chapter V (§25 *et seq.*) and elsewhere in Parts Two and Three.

Technical exercises develop dexterity in the most rapid manner and shorten the way to artistry. Consequently, many teachers believe that dexterity comes first and music next. The authors think just the opposite, and so do the pupils. We do believe, however, that there comes a time when exercises are of the greatest value, and students are convinced of the fact. Then is the time to use them.

Just when that time arrives is a difficult question to answer. We believe that it comes when the pupils begin to play the music in Volume Three of the *Willis Graded School Orchestra and Band Series*, and it is in the conductor's score to these volumes that reference to the technical exercises is found. We believe that pupils who have used the *Universal Teacher* and the earlier books of this series have played sufficient music to be ready to use these exercises in the right spirit and profit by them.

Teachers who do not agree with the above will find exercises in these books that may be used with the *Universal Teacher* and the first two volumes of the *Willis Graded School Orchestra and Band Series.* The leader should bear in mind that this volume and the exercise books that accompany it may be used with any band or orchestra music even though constant reference is made to the Willis series.

§112. Technical Training for Leaders

It would be a good thing if all orchestra and band leaders had a thorough technical training on every instrument but the authors realize that it will be a long time before this is possible. There are, and will continue to be, many people leading bands and orchestras who are not technically trained. This book is written with these in mind as well as those who are technically trained.

§113. How to Assign Exercises

The untrained leader will have difficulty in selecting just the exercise that will best help the pupil in any particular piece, but if these leaders will study carefully the directions given in the pages of directions in the score to the *Willis Grade School Orchestra and Band Series*, Volume III, he will learn to apply these exercises to any music the ensemble may be playing. In this score all the exercises needed are referred to, also to just what part of the piece they apply.

These exercises are to be used for home practice for the pupil in preparing for tryouts. The private teacher should be asked to assist the pupil in learning to play these exercises correctly, but the leader and the rest of the ensemble are to be the judges as to whether the result is satisfactory or not.

§114. When to Assign Exercises

The leader should never assign a lot of exercises for the players to work on just for the sake of practising them. That is not what these books are for. With the leverage the tryout gives, the leader will be tempted to do just this. That would defeat the success of the whole scheme. If pupils see that exercises are getting them somewhere they will slave on them without being driven. When assigning exercises, let the pupil know just what they are for and what they will do to help him on the road to artistry in that particular piece. Let the pupil help select the necessary exercises from his book. By assigning exercises as suggested the pupil will see that the teacher is interested in his success rather than putting more unpleasant work upon him just because he has the power to do so.

The authors have endeavored, in writing the exercises for the different instruments, to select only the most necessary, and those that are particularly adapted to ensemble playing. They have tried to provide enough exercises to make the books effective and not so many as to make them formidable. The difficulty of doing this will be more apparent to the reader when it is called to mind that one authority has put out a book containing more than four thousand bowings for the violin alone.

§115. Watchfulness

The leader must observe many things besides the music during the orchestra or band rehearsal. He must of course see that the music is played correctly but in addition he must watch all the players and see that they use their instruments correctly and by so doing make a better quality of music and do not grow up with bad habits that will hamper their musical development. There are certain technical things about the use of each instrument that the leader should observe and see that they are done correctly. Young players are especially prone to carelessness and the critical eye of the leader should be constantly on the alert to check up on all technical flaws.

This carelessness is not confined to student groups by any means. For instance, a great symphony orchestra engaged a new leader. The string section improved remarkably. The reason was not far to seek; the new leader was a violinist of note and he knew all the tricks of the string section perfectly. He not only showed the players how to improve but he held them up to a high standard; in short they could "put nothing over on him."

This is a great deal to expect of the band or orchestra leader, but the more closely he approaches this ability the better the ensemble will be. If the leader will study the directions for performing the various exercises and will pay close attention to the positions pictured in this and the students' books he will soon be able to check up on all the vital points of the playing of all the instruments, and will be so keenly and intelligently observant that the playing will greatly improve. Pupils will also feel that they must check up on their own playing more carefully.

§116. The Students' Books

These are divided into four sections as follows: Section I; exercises for the entire ensemble, band, orchestra or any group of instruments. They may be played in ensemble or individually or assigned for home practice for tryouts. The leader should use judgment as to how much time should be taken in practising these exercises in ensemble. Not very much time should be taken at any one rehearsal but some should be used at every rehearsal. When an exercise has fulfilled its mission it should be laid aside and not used again. Section II consists of exercises for wood-winds, brasses, and instruments of percussion or any ensemble of these such as a band, a section of the band, the wind and percussion sections of an orchestra, or a drum corps. Section III contains exercises for strings in any combination, none for winds. These exercises may be used in playing of ensemble as stated above and as individual work or assigned for home study for tryouts. Section IV consists of exercises containing problems covering the difficulties of each instrument. The exercises in Section IV may be played individually or assigned for home practice to be used at the tryouts but cannot be played in ensemble.

It will be noticed that each exercise may be used in many different ways. With this plan the student can readily memorize the exercise and his whole attention can be given to the different ways of performing it.

CHAPTER XVIII

§117. Use of the Exercises. Sect. I (Students' Books)

SECTION I begins with nineteen sets or successions of chords which are to be played in ensemble work entirely. These chords are to be used to develop the pupils' harmonic sense by their holding and listening to full chords and also to develop their ears to enable them to play exactly in tune, which makes pure harmony possible.

It has been suggested in various places in this book that the leader should tap once and have the players hold chords until they hear all the tones and bring them into perfect tune. Chords are given in the pupils' books for the same purpose—to train them to hear and use chords in a more intensive way. As no tempo is given for these chords, the leader may have them played slowly enough and each chord held long enough for the pupils to hear all the tones, balance the power of each tone and bring it into perfect harmony with all the others, by "humoring the tone."

The suggestions in §111 and elsewhere that technical exercises should be introduced later than has been the custom, does not apply to these chords when used for intonation and balance. These are the things pupils should study at the very beginning and these chords will be found useful, employed in moderation, in all instrumental classes and ensembles of every kind, no matter how elementary.

The leader should keep in mind the following facts at all times, but especially when training ensembles in the use of these chords. All the faults of the players will show when playing these slow successions of chords, and with this slow playing the leader has the opportunity to correct these faults.

§118. "Humoring the Tone"

All string players are aware that they can change the pitch of a tone by moving or rolling the finger if it does not happen to strike in the right place. Wind players can also change the pitch of their instruments, even though most of them are played with keys. This changing of pitch while holding the tone is called by musicians "humoring the tone." It is this ability on the part of the players that enables an orchestra to play with perfect intonation when the individual members are expert in the fine art of humoring the tone. With this accomplishment is developed a keenness of hearing that is one of the best forms of ear training, and pupils should begin to do this very early. Players of wind instruments

must humor their tones constantly and their ability to do this depends both upon lip control and ear training. The perfection with which this is done distinguishes the artist from the amateur.

A pupil cannot hold a tone in tune or change it to bring it in tune unless he has developed what is called "embouchure," that is, strength of lip. This is one of the reasons young pupils have trouble tuning their instruments. The following are the ways of changing the pitch or humoring the tone of the different instruments:

Players of the clarinet, oboe, bassoon, saxophone and sarrusophone may lower the tone by relaxing the lips and lowering the jaw as in saying *oo*.

All brass players may lower the tone by relaxing the lip pressure. By lip pressure is meant the pressure of the lips against each other and not the pressure of the instrument against the lips. Good players press the instrument against the lips very lightly, just enough to keep the air from escaping between the lips and the mouthpiece.

Flute and piccolo players may lower the tone by turning the mouthpiece in so that the hole comes nearer the player's lips. The tone may be raised by turning the mouthpiece away from the lips.

The best tone-quality is produced from all of these instruments when the tone of each approximate pitch is as high as possible, for then the lips are at the highest tension. This fact must be considered when tuning the instrument. The instrument that is tuned low and kept up to pitch by humoring the tone will give the best tone.

All wind instruments should be warm before they are tuned, for the pitch of an instrument rises when it gets warm. If the instrument is tuned when it is cold the tone must be humored down as it warms, which means that the player must use a relaxed lip with resulting poor tone-quality.

All wind instruments should be tuned *pianissimo* and much of the playing should be with a soft quiet tone, for it is the *pianissimo* playing that strengthens the embouchure.[1] A famous cornet soloist said, "If you want to learn to play *fortissimo*, do your practising *pianissimo*."

Many amateur bands and orchestras play badly out of tune because they tune loudly and play loudly most of the time. It is difficult to play loudly and hold the lips tense at the same time, as the embouchure is not strong enough in young players.

The leader or teacher who has the patience and force to insist upon his pupils playing softly to develop embouchure early and at the same time teaches them to humor the tone and listen intently to the intonation at the very beginning, is sending them on the short, sure way to artistry with nothing to undo later.

§119. Practice on Wind Instruments

Beginners on all wind instruments should practise several short periods daily rather than one long period. At first the lip muscles quickly become fatigued and forced practice when fatigued may result in injury to the lips and the muscles controlling them. The young player should watch carefully and rest a few moments before his muscles begin to tire.

[1] Excellent practice material will be found in Collins' *Daily Embouchure Drills*, published by The Boston Music Co.

§120. Vibrato, Wind Instruments

The wind instruments should *never* play vibrato except in jazz bands and jazz orchestras. It is produced on wind instruments by shaking the instrument so that the lip pressure varies. Players should never resort to what is called "throat vibrato," which is merely a checking of the flow of breath. Playing vibrato on wind instruments in the latter way will ruin the player's ability to produce a smooth tone.

§121. Breathing

Listening to many bands and orchestras has convinced the authors that it is time some good singing teacher took hold of the wind players and taught them the foundation of their work. Little attention to breathing is paid by the usual orchestra and band teacher. The first requisite of the wind instrument player is a strict adherence to the rules of correct breathing as used by successful singers. These will be found in Chapter VIII, §45. The next most important factor, and founded directly upon breathing, is phrasing (§44).

Wind instrument playing may be regarded as mechanically produced singing. The more closely good vocal habits are followed the more pleasing will be the instrumental result. The singer has words to assist in conveying his emotion to others while the instrumentalist has a greater amount of endurance and a more versatile technique. In place of the great variety of vowel and consonant sounds and the varying tone colors at the disposal of the singer, the instrumentalist has but one tone-quality which might be termed its vowel sound, and the whispered pronunciation of the syllable *too* to take the place of all the consonants. With this limited medium the instrumentalist is able to produce a great variety of effects, some of which are beyond the capacities of the greatest singers.

A wind instrument player as well as the singer must first learn to produce a smooth, steady, flowing tone of pleasing quality. The singer next learns to add words to this fine tone quality without in any way impairing or altering the smooth flow of beautiful tone. The wind instrument student must travel the same road and perfect each detail as carefully as the singer if he wishes to be successful.

§122. Articulation

When the student has established good breathing habits and a good tone he is ready to begin the study of articulation, which is merely learning the judicious use of the whispered syllable *too* in its various forms, namely, *too*, *tut*, *thoo*, and *thu*. Players of all instruments equipped with cup mouthpieces, and also flute and piccolo, have at their disposal another form of articulation which, though much inferior, may be used in extremely rapid passages with good effect. That is whispering the syllable *ka* between two whisperings of *tut*, thus: *tukatut*, *tutikatut*. This articulation is merely for speed and cannot be used in any other way for it is really merely a stopping of the breath and not an articulation.

In singing, the tone has been likened to a flowing stream on which the words fell like leaves and were carried away on the bosom of the stream. Substitute the word "articulations" for "words" and you have a picture of good instrumental playing. The whispering of the syllable *too* does not stop the flow of breath nor interrupt the tone but is merely added to the tone as it flows onward.

A good way to practise articulation is to test the steady outflow of breath while playing open tones, using the syllables, *tut-tut-tut-too-too-too-too, thu-thu-thu-thu, tut-thu-too-tut*, etc. To do this, place the tips of the fingers of one hand on the abdominal muscles just below the waist line in the middle from side to side and the thumb on the ribs as high and as far around at the side as is possible to reach without moving the finger tips from their position. The muscles under the tips of the fingers should sink in first and later the ribs under the thumb should sink also. The chest should not move and the movements felt by the thumb and fingers should be perfectly steady. When taking a new breath a quick expansion should be felt under the fingers and thumb at the same time, also around under the shoulder blades. A little experimenting on this will convince wind instrument players of the absolute necessity for good position.

Next, the player should stand or sit before a mirror and watch the face and neck muscles while playing the same exercise. If the jaw moves in the slightest degree or the neck puffs out as he articulates, he is using bad articulating habits, even if the breathing and tone quality are correct. The only muscle that should move in articulating is the tongue, and of that only the tip. Players who allow the back part of their tongues to move are unable to articulate rapidly or play staccato or legato effectively.

§123. Holding the Bow

Bowing is the breathing of the string section. Without proper bowing the pupil can never play well. In order to learn how to bow properly the student must first sit properly and hold the instrument and bow correctly.

It is very difficult to get violin students to hold their instruments and bows properly. The greatest trouble is usually with the thumbs, and every leader will do well to study the illustrations in Appendix C and see that every stringed instrument player learns and maintains the correct playing position, without which no good string effects can be attained. The right thumb should be so placed that the end of the nail is pressed against the wood of the stick between the grip and frog, the outer joint of the thumb being pointed toward the palm so that the back of the thumb touches the hair of the bow and the metal ferrule through which the hair passes. The first three fingers should cross the stick at the outermost crease between the joints, and the two middle fingers should be opposite the end of the thumb. The tip of the little finger rests on the stick. Have the players check up on their position by pointing their bows upward and comparing their position with that shown

in the illustration of the bow hand in the students' books. The neck of the violin or viola should rest on the inner side of the outer joint of the left thumb and the base of the index finger without gripping. Every player should equip his bow with a grip, preferably of rubber, which keeps the thumb from sliding along the stick and enables the player to hold the bow loosely.

Cello players need not bend the thumb outward, otherwise the bow position is the same.

Bass players loosely grip the frog of the bow with the two middle fingers of the right hand with the forefinger extended along the stick and the little finger along the frog. There are two or three positions for holding the bass bow. The position described is that used in the leading symphony orchestras.

§124. Use of the Bow

The singing tone of the string sections of the great symphony orchestras at which we marvel may be approached by any orchestra by paying close attention to economy in the use of the bow. Amateur players unconsciously use up the bow at the beginning of a sustained tone, which results in a diminuendo if not a scratch or pause before the succeeding tone is begun. Very often the note values are slighted because the players run out of bow, hence they attack the succeeding tone ahead of time. The way to overcome this fault is to draw the bow slowly at the beginning of the tone thus saving one-half to two-thirds of the bow for the last beat or count. This is the technical way of phrasing, as the singer does. For further hints on phrasing see Chapter VIII.

§125. Vibrato, Strings

Violin and Viola: place the hand in the third position so that the palm close to the wrist touches the body of the instrument. Place the second finger solidly on the A string. With these two points fixed, moving the hand back and forth rapidly produces pulsations of the tone. The hand should be moved very little. With the hand in this position the vibrato will be done correctly. Later, when the pupil has mastered this motion in this position, he should try it with the other fingers in the third position, and later with all fingers in all positions. The variation in pitch should be very slight and the rapidity controlled by the player to suit the desires of the conductor. The same directions apply to the cello, *mutatis mutandis*. See students' books for vibrato exercise.

The vibrato should be used very sparingly if at all in concerted work and then only in dramatic places and at the call of the leader. The student should *never* attempt the vibrato until he can play perfectly in tune or his ear will not develop as it should. Many a fine student has been spoiled by the too early use of the vibrato.

§126. The Chord Exercises

The full chord is printed in each of the students' books. The tone his instrument is to play is printed in large notes, the others in small notes.

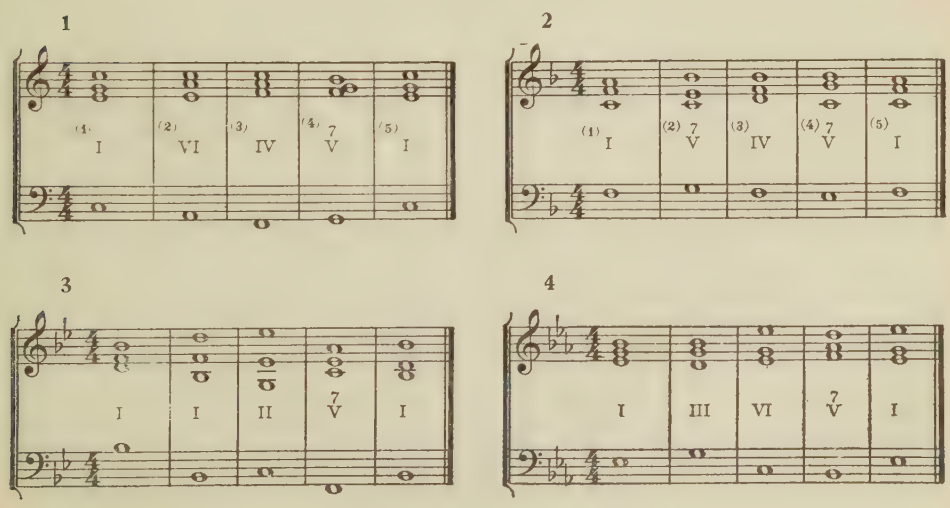
This is done in order that the student may see all the notes of the chord as the ensemble plays it. These chords may be played by any combination of instruments. The student may practise them at home with any other students that he may be able to assemble. If the large note printed in his book is out of his present range he may play some other note of the chord until his range extends to the note suggested. If when students are playing in ensemble the chords do not balance, the student may either play more softly or play some other note of the same chord until the different tones of the chord do balance.

This chord playing is profitable in many ways as it gives the students time to hear all the different tones of the chords, gives them time to tune perfectly and by listening for balance they learn one of the most important things a musician should know: how to temper his playing to the rest of the ensemble in power as well as speed. The importance of these uses of the chords can hardly be overestimated. It is time well spent to have some of this at each and every rehearsal. The rehearsal should begin with some well-known selection to warm up on and then two or three minutes of chord work is most valuable. Pupils get very interested in this as the perfect chord is very beautiful and they are getting an early insight into harmony.

§127. Analysis of Chords

In the first nine exercises the chords are numbered with the customary Roman numerals indicating the degree of the scale on which the chord is built. Should the teacher so wish, he may teach the players to recognize the common chords by remembering the distinctive sound of each. Later they may be asked to write the numerals under the chords in Exercises 10 to 14. In Exercises 14 to 19 the key changes and the players may be asked to analyse the first two and the last two chords in each exercise and tell the keys in which it begins and ends.

Exercises 1 to 19



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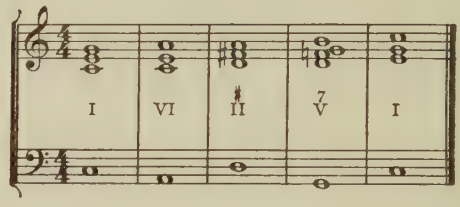

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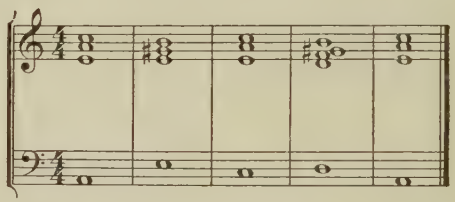

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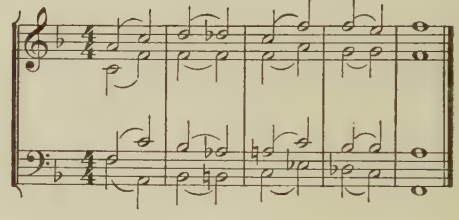

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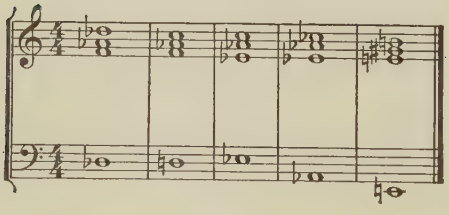

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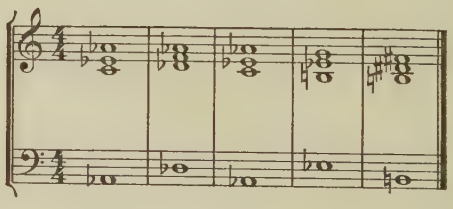

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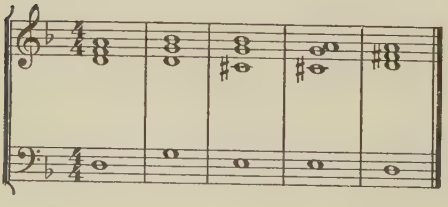

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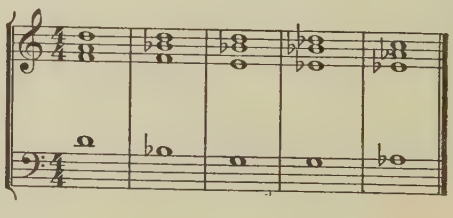

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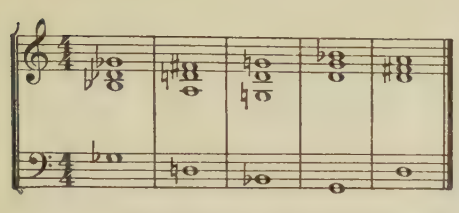

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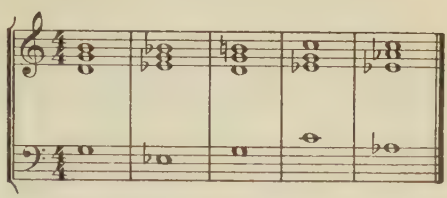

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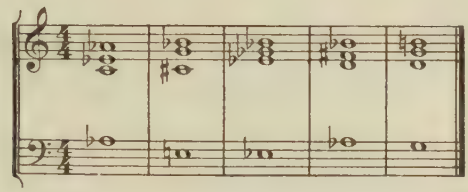


§128. Use of the Chords

There are various ways of using these chords. To do so effectively and without waste of time some routine should be adopted and used in ensemble playing. As there are five chords in every exercise except No. 12, the following way will be effective: the teacher may put the number of the exercise on the board or announce it, then when he wishes the first chord played he may hold up one finger, two for the second, etc. In this way the teacher can ask for any chord and play the series in any order. Playing them in reverse order will show that certain chords do not resolve readily into certain others. If the leader wants a chord played *pp* he may hold up the right hand to show the number of the chord and the left near it to show how loud. If *ff* is wanted he may hold the left hand farther away. If a *crescendo* is wanted the left hand may move away from the right, and the reverse for *diminuendo*.

§129. Moving One Part at a Time

It is often a good plan to have only one part move to the next chord while the other instruments hold the tones they are playing. This will make some discords (technically known as "suspensions") but it helps the players to analyse the chord progressions by taking one part at a time to the new chord. To do this without having to speak above the tones of the players and so make a discord with the music, the leader, while holding the number of the chord all are playing with his right hand, may signal to some player or group of players to move to the next chord, giving the number of the next chord with the left hand, holding up the proper fingers. This means that the player or players he signals are to move to the chord called for by the left hand and hold that until told to change. The leader then may bring forward other groups of players until all are on the next chord. In like manner he may take players or groups of players back to the preceding chord, etc.

§130. Arpeggios

Another good use of these chords is to allow certain players or groups of players to play the arpeggio as the others are holding the chord. The leader may signal some player or group with his left hand and by moving his hand up or down and stopping it various places carry the player or group through the arpeggios as rapidly or as slowly as he wishes, taking care to allow them to remain on each tone long enough to play it in perfect pitch.

Other ways of using these chords will occur to the leader and he will find the use of them most valuable besides being very fascinating to the players.

§131. Tone-Quality

In all this chord playing the teacher should bear in mind that it is the soft, smooth tone that develops good embouchure, correct ear, and pure intonation and that it is only when the players can play a good *pianissimo* that they should be asked to play louder. Their ability to play louder is indicated when they can swell the tone and still keep it in perfect tune with good tone-quality. In other words the leader should see to it that when louder tones are asked for the player stops with the degree of loudness that he can use and still keep his instrument in perfect tune and quality. He must stop his *crescendo* just before he gets out of tune and quality, instead of just after.

While using the chords as outlined above it will be well for the pupils to memorize them so that the teacher need only to refer to the exercise number to have them played. This will be of great help in their next use as outlined later.

CHAPTER XIX

§132. Further Uses of the Chord Exercises

THE CHORD progressions in the preceding chapter may also be put to excellent use in developing good attack and release and for drill upon various rhythmic problems; as illustrated in the exercises in this chapter. Both here and in the students' books the first one or two measures of a rhythmic or dynamic pattern is given, the chords used corresponding to the first two chords in Exercise 1. Beginning in this way, the pattern is to be followed consistently through to the end of the exercise. The patterns may be applied to any or all of the preceding nineteen exercises, thus greatly multiplying their number and variety. The leader may find it advisable to have each figure or pattern repeated several times on each chord.

Great care should be taken when using the chords in this way to preserve perfect intonation and beautiful tone. Pupils and teachers alike must watch closely here as all are prone to gaily lay aside old habits when acquiring new ones.

§133. Staccato Chords

Exercise 20

[1]W. W., Wood wind.
B. W., Brass wind.
Str., Strings.
S. D., Snare Drum.
B. D., Bass Drum.
Timp., Timpani.
Cym., Cymbals.
Tamb., Tambourin.
Tr., Triangle.
Cas., Castanets.

Pepperdine Universi

This exercise is useful to train the ensemble in playing short staccato chords, such as occur at the close of many selections. The difficulty lies in getting all the players to attack and release the tone simultaneously.

WINDS—

Players should pronounce the syllable *tut* on staccato tones.

PERCUSSION—

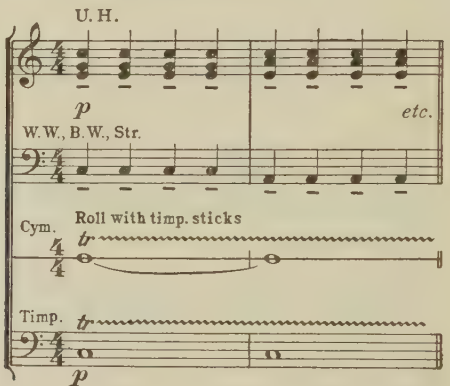
Drums and cymbals must be muffled immediately after they are struck on staccato tones. This is done by placing one hand on the membrane to stop the vibration. Cymbal players usually touch the cymbals against their chests, but care must be taken that they do not allow the vibrating cymbals to come in contact with a coat button in so doing. The bass drummer makes a roll by holding the stick by the middle and shaking his wrist so the ends of the stick strike alternately.

STRINGS—

String players should usually play the staccato tones down-bow at the frog, if they are loud, by pressing the bow with the index finger and releasing the pressure just as the bow starts to move. (See Exercise 24.) If they do not release the pressure a scratch will result, while, if they do not press the bow down before starting the tone, the attack will be legato.

§134. SUSTAINED TONES, ONE TO EACH BEAT

Exercise 21



It is difficult to play these without accenting each tone. They should be played without the slightest accent and the tones should follow each other so closely as to sound almost like a single sustained tone.

WINDS—

Wind players whisper the syllable *thu* and use a perfectly steady breath.

PERCUSSION—

The cymbal roll should be played by suspending one cymbal by a cord and executing the roll with timpani or snare drum sticks in the same manner as it would be done on a drum. The players should practise

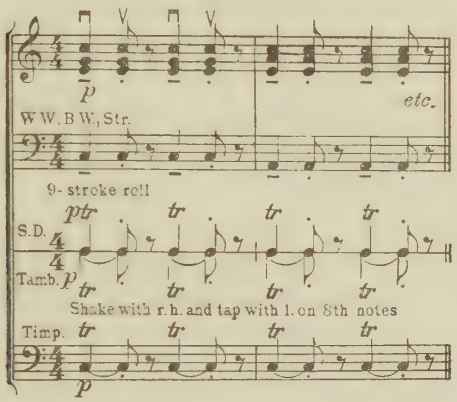
using both kinds of sticks, as composers may call for either. Another way to produce a roll on the cymbals is to have one player hold two cymbals about three inches apart and another player shake a drum or timpani stick rapidly between them.

STRINGS—

String players should use the upper half of the bow, beginning and ending each tone with a slight pull or push with the wrist and fingers. The string players should feel that they are swinging the bow arm from the elbow, like waving a handkerchief to and fro.

§135. TENUTO AND STACCATO

Exercise 22



A combination of Exercises 20 and 21 played softly.

WINDS—

Wind players whisper *too, tut.*

PERCUSSION—

Snare drum players should consult Section IV of their exercise books to find out how to play the nine-stroke roll called for here. Tambourin player holds the tambourin vertically in the right hand, shaking it gently for the legato and tapping it lightly with the fingers of the left hand for the staccato note. Timpani player must muffle his drum instantly after each eighth-note is played.

STRINGS—

String players use upper half of the bow with the staccato tone on the up-bow.

§136. SUDDEN *PIANISSIMO*

(Ex. 23)

This effect is a rarity, even in professional bands and orchestras. Still more rare is the sudden change from *ff* to *pp* with both degrees in tune, and well-balanced. A *fortissimo* ceases to be enjoyable when some of the voices are drowned by others, or when the tone-quality is bad or the intonation is poor.

Exercise 23

WINDS—

In playing the *fortissimo* chords the wind players should be told to play as loudly as they can play in perfect tune (free from beats) with good tone-quality and at the same time hear all the other instruments. This will produce a well-rounded, organ-like *fortissimo* which will be enjoyed by every listener. The *pianissimo* should be very smooth, in perfect tune and perfectly balanced, each player playing so softly that he can hear all the other players.

PERCUSSION—

Drummers should strike near the center of their drums when playing *fortissimo* and near the edge when playing *pianissimo.* The average point to strike is about one-third of the distance across the head. They should also raise the sticks higher when playing loudly. The timpani player's sticks should rise above his shoulders when playing *fortissimo.*

STRINGS—

When playing very loudly, string players should draw the bow across the strings about half an inch from the bridge. When playing very softly the bow should cross the bridge at a point half an inch over the end of the fingerboard. The various degrees of loudness should be played at proportionate distances between these points.

§137. THE *FORTE-PIANO*
(Ex. 24)

This is also a difficult effect for an ensemble to produce. The duration of the loud part of the tone should not exceed one-twentieth of a second while the remainder of the tone should be soft. Both parts of the tone should of course be in tune and of good tone-quality. The players should not attempt to overdo the accent but should rather be concerned with producing a sharp accent of momentary duration.

WINDS—

Wind players should obstruct their breath flow with their tongues, at the same time contracting their abdominal muscles, so that the pent-up breath is released by the whispering of the syllable *too-oo-oo.* The effect will be a sharp, staccato attack, followed by a smooth, soft, sustained tone.

Exercise 24

Percussion—

Drummers should strike with much force just once, then maintain the *pianissimo* by playing near the edge of the drum head.

Strings—

String players attack the tone by pressing on the bow with the index finger until the hair spreads apart on the string, then releasing the pressure the instant the bow begins to move, using about one third of the bow on the accent, suddenly checking the motion of the bow and saving almost half of the hair length for the fourth count. When this stroke occurs on the down-bow the little finger must be used to counteract the weight of the bow in attaining a sudden *piano* near the frog. On the up-stroke the little finger is added as the middle of the bow passes the strings, for at this point of the stroke the balance of the bow weight shifts to the end opposite the player's hand and this must be counterbalanced as the up-stroke continues by increasing the pressure of the little finger on the bow-stick. *Forte-pianos* are usually executed on the down-stroke, as are all accents, but practice is here provided for both the up and down strokes.

This balancing process is only partially true of the cello because of the angle at which the instrument is held.

Bass players use the thumb and index finger to press the bow hair against the strings and are not concerned with problems of bow-balance.

§138. Contrasted Staccato-Tenuto and *Fortissimo-Pianissimo*

(Ex. 25)

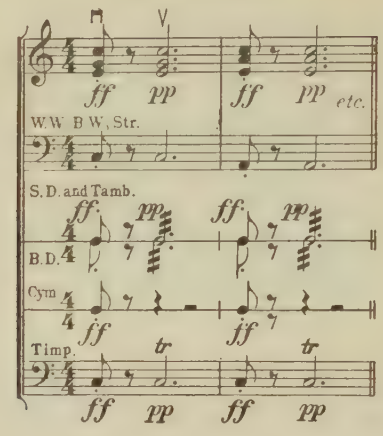
Winds—

Wind players whisper the syllables *tut, too.*

Percussion—

Drummers should strike with one stick, then quickly muffle the sound by stopping the vibration of the heads with the free hand. Tambourin should be made to strike the knee of the player while in a horizontal position so the jingles will not continue. The remainder of the measure is played like Exercise 22.

Exercise 25



STRINGS—

Play the first chord at the frog, as explained in Exercise 20, lifting the bow and placing it on the string at the point during the eighth-rest, in readiness to begin the sustained *pianissimo* tone. It requires much practice to enable a player to place the point of the bow on the string in so short a time without making an audible sound. The strings may also practise making a *crescendo* to *ff* on the dotted half-note. They may also practise playing both tones down-bow, lifting and replacing it silently at the frog.

§139. COMBINED TENUTO-STACCATO AND *PIANO-FORTISSIMO*

Exercise 26

WINDS—

Wind players whisper *too-oo, tut.* There should be no audible break between the long and short tones.

PERCUSSION—

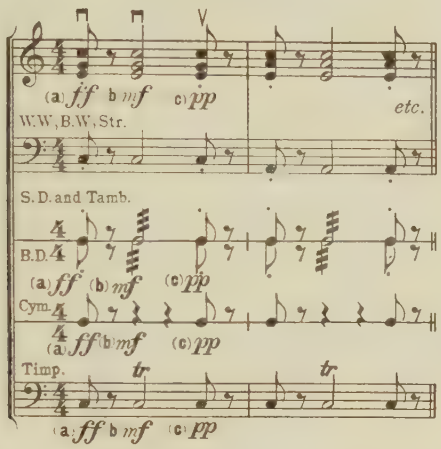
The drums must be damped instantly on the staccato tones.

STRINGS—

Starting a *pianissimo* tone at the frog is a delicate task requiring much practice, for the players must place the bow on the strings silently, remembering to place it over the edge of the fingerboard. The up-stroke is staccato and is played as described in §135, except that the bow must be lifted and carried to the frog instantly, to be ready to attack the following tone *pianissimo*.

§140. STACCATO-TENUTO, SYNCOPATED

Exercise 27



WINDS—

The breath should be steady, interrupted only by the tongue in articulating the whispered syllables *tut*, *too-oo*, *tut*. When practising this exercise loudly the players contract the abdominal muscles more, to create more breath pressure.

PERCUSSION—

The tambourin is played *fortissimo* by striking it against the knee for accents and shaking it laterally in sustained tones. When played *pianissimo* it is tapped with the fingers for accents and the player makes the roll by rubbing the tip of his dampened thumb near the edge of the head while holding the tambourin in a horizontal position, head down. It may also be laid on a pillow, head up, and struck with the snare drum sticks, just as a drum is played. The former ways are more effective however.

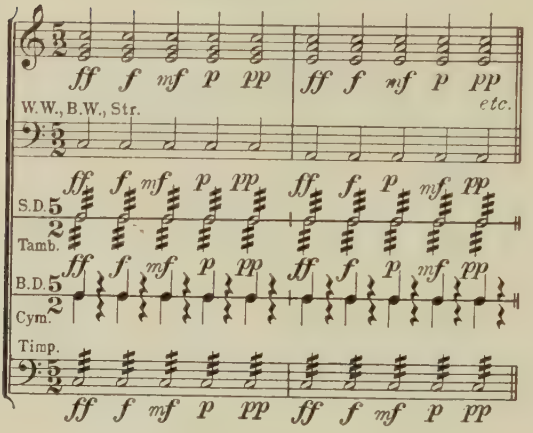
STRINGS—

Strings play the first tone as in Exercise 25, though using less bow and bringing the bow back into position for attacking the next tone at the frog, using full bow for the half-note and playing the final eighth as in Exercise 26. In practising this exercise *pianissimo* less bow should be used for the staccato notes, which should be executed by the wrist and fingers. The half-notes should receive full bow whether *pianissimo* or *fortissimo*.

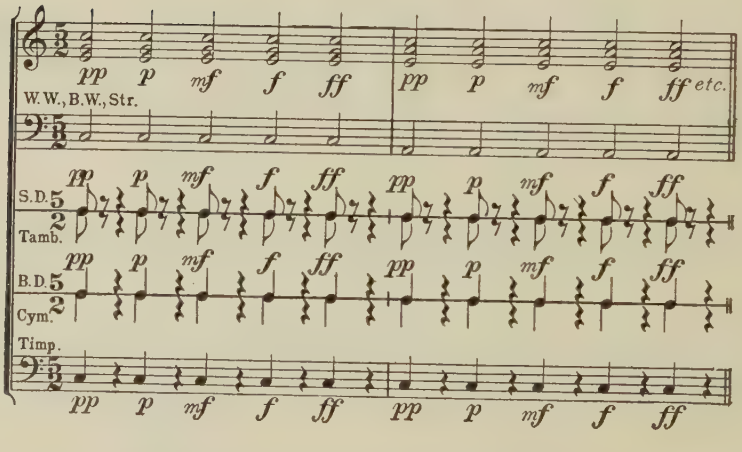
CHAPTER XX

§141. Relative Intensities

Exercise 28



Exercise 29



These are very important exercises for teaching the players the exact degree of loudness indicated by each expression mark. The *fortissimo* is described in §136. *Fortissimo, forte, mezzo-forte, piano* and *pianissimo* should each be half as loud as the one preceding. Each player must hear all the other players at all times, regardless of his individual idea as to how loud each of these marks indicate that they should play. The *pianissimo* should be so soft as to be scarcely audible.

WINDS—

Wind players who cannot play *pianissimo* should practise long tones at home until they can.

PERCUSSION—

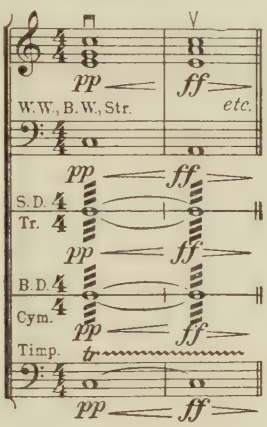
The bass drum and cymbal players will probably have some difficulty in learning to gauge the power with which they strike.

STRINGS—

String players should see that their bows cross the strings near the bridge when playing loudly and near the fingerboard when playing softly. Use full bow on every tone.

§142. *CRESCENDO* AND *DECRESCENDO*

Exercise 30



The difficult part of the "swell" is the last half—getting back to *pianissimo* again after reaching the *fortissimo*. A great conductor once said, "Any orchestra can make a *crescendo* but few can make a *decrescendo*. When they reach the summit they seem to just fall over on the other side." The players should learn to make the *decrescendo* as gradual as the *crescendo* and as complete. The *decrescendo* chords should be held until a real *pianissimo* is reached.

WINDS—

Especial attention must be given to intonation, balance and tone-quality.

PERCUSSION—

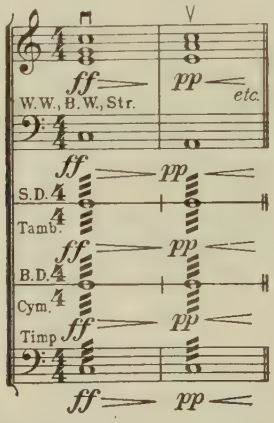
Drum players should begin the roll half an inch from the edge of the drum head, then move the sticks gradually toward the center and raise the sticks higher as the *crescendo* progresses. The triangle roll is made by shaking the beater in one corner of the triangle, bringing the beater nearer the center of the triangle and widening the shakes according to the volume desired.

STRINGS—

String players find it easier to make the *crescendo* up-bow and the *decrescendo* down-bow. The reason is that it is easier to press the bow down near the frog than near the point because of the added weight of the bow when playing near the frog. It is not always possible to take the easiest road however and the opposite bowing is marked to give the needed practice. Players should slide their bows nearer the bridge as the *crescendo* mounts and away from it as the *decrescendo* progresses. This sliding must be very gradual or the tone will not be smooth.

§143. *DECRESCENDO* AND *CRESCENDO*

Exercise 31



This is Exercise 30 reversed. Sustain each chord until the desired volume, intonation, tone-quality and balance are attained before signaling for the next chord.

WINDS AND PERCUSSION—

As indicated in the exercise.

STRINGS—

Here the usual custom is followed. The *crescendo* occurs on the up-bow and the *decrescendo* on the down-bow (see §142).

§144. CONTRASTED STACCATO TONES, *FORTE* AND *PIANO*

(Ex. 32)

WINDS—

Wind players should keep a steady flow of breath, varying the pressure to suit the power of tone. Whisper *tut, tut, tut, tut,* on the staccato tones.

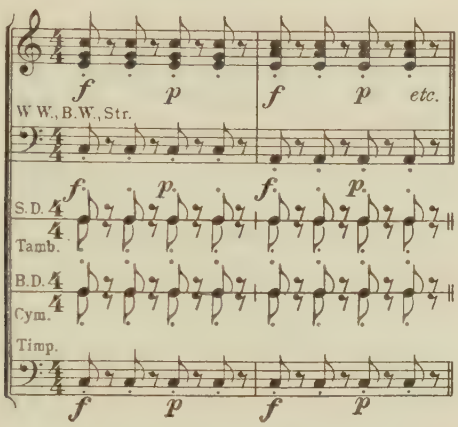
PERCUSSION—

Drum players strike with the right hand and damp with the left. Timpani player should use hard sticks.

STRINGS—

String players use the upper half of the bow, attacking each tone by pressing the bow before starting the tone and again to stop the tone. It is difficult to do this without an accompanying grating sound, caused by allowing the bow to move under pressure. The difference between *forte* and *piano* is made by starting the bow just as the pressure is released when playing *forte*, and releasing the pressure before starting the tone when playing *piano*.

Exercise 32



The duration of these tones should be exactly the same, the difference being one of volume only.

§145. CONTRASTED DYNAMICS, MORE ANIMATED

(EX. 33)

More rapid legato and staccato, similar to Exercises 21 and 32, except that the first four notes are *forte* and the next four *piano*.

WINDS—

Wind players will find this an excellent exercise in keeping the abdominal muscles contracted to the proper degree, which is the same in staccato as in legato. Watch the clarinet and saxophone players in this exercise and see if their chins move when playing staccato. If they do, keep them practising this exercise until they break that bad habit and learn to attack their tones with their tongues and not their chins (see Chapter XVIII, §122). For the legato tones the wind players whisper the syllable *thu* and for the staccato tones *tut*.

PERCUSSION—

Drum players strike without muffling, striking nearer the edge for the *piano* tones.

STRINGS—

String players use the upper half of the bow for the legato tones, drawing the bow with the forearm and starting and finishing each tone with the wrist. The last tone in the legato groups should be played with the full bow to enable the player to start the staccato tones at the frog. The players should poise the bow about two inches above the string, playing each staccato tone with a short stroke executed by the wrist and fingers. The forearm may move slightly when playing *forte* but not at all when playing *piano* at the frog.

Exercise 33

§146. CHORDS IN TRIPLET RHYTHM

Exercise 34

The first tone of each triplet should be slightly accented. The tempo should not exceed ♩=72. This exercise may also be practised *piano* and *forte.*

WINDS—

Wind players may practise this exercise legato and staccato and the tempo may be increased to as fast as the players can "single tongue."

By this is meant one stroke of the tongue for each tone. Legato, whisper *too-too-too;* staccato *tut, tut, tut.*

PERCUSSION—

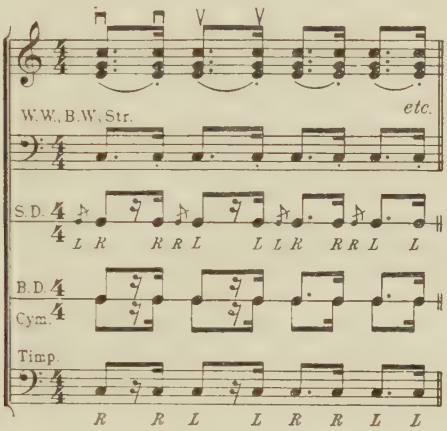
Snare drum and timpani players must practise accenting alternately with the right and left hands. Bass drummer plays with single strokes, not with both ends of the stick as in making a roll.

STRINGS—

String players play with loose wrist and forearm using the upper third of the bow, legato, observing the accents.

§147. THE RHYTHMICAL FIGURE

Exercise 35



This common figure is often played inaccurately, the difficulty lies in making the first tone three times as long as the second. As often played the first tone is only twice as long as the second. Players must learn to mentally divide each count into four units, three of which belong to the first tone and one to the second.

WINDS—

Whisper *too-tu-too-tu.*

PERCUSSION—

Snare drum player will find instructions for playing this figure (flam) in the back of his exercise book (see Chapter XXII, §165). Bass drummer strikes glancing blows down and up. Cymbal player strikes glancing blows with the cymbals on the eighth-notes in such a way that both cymbals are brought in contact with some part of his clothing the next instant.

STRINGS—

String players should practise this figure at the point, middle and frog, although it is seldom necessary for them to play similar passages at the middle of the bow. The first tone is started without pressure, the bow stopped and pressed before attacking the sixteenth-note. The

bow should not be pressed preceding the dotted eighth-notes. If the players experience difficulty have them repeat the following, then carry it out: "down, press, down up, press, up down, press," etc. When practising this bowing at the frog the forearm should be held stationary and the wrist and fingers made to do all the work.

§148. Chords Slurred in Pairs

Exercise 36

Slur each pair of chords up to the last measure. This exercise may be practised *pp*, *mp*, *mf* and *f* and with a *crescendo* on the first measure and a *diminuendo* on the second.

Winds—

Wind instruments slur by whispering the syllable *too* at the beginning of the first note embraced by the slur and at no other place.

Percussion—

Triangle roll as described in §142.

Strings—

Strings must save the bow at the beginning of each pair of chords. It would be well to have them practise beginning each bow stroke *pianissimo* and making a *crescendo* on the last two counts. Strings slur by playing all the notes embraced by the slur on one stroke of the bow.

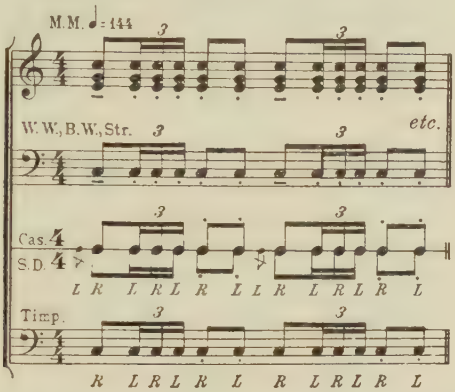
§149. Alternating Groups

Exercise 37

Each section plays the chord alone, then they are combined. The conductor may motion the sections in and out as he may desire, bringing each one into perfect tune before signaling to another section to join. This exercise is excellent for practising a *crescendo*, beginning with the string section *pp* then adding the woodwinds, horns, brasses and percussion, having each choir enter *pp* so that their entrance is inaudible and the general contour of the *crescendo* unbroken.

§150. Chords in More Animated Rhythm

Exercise 38



A combination of Exercises 32 and 34 but much faster.

Winds—

Woodwind players except the flute cannot articulate as rapidly as indicated and must be content to try. Some players are able to "triple tongue" in the lower registers of their instruments and they may be allowed to play the lowest tones in the chords. Many similar passages are written for these instruments and it is possible to produce an effect similar to a *legato* triple tongue. They actually whisper something like this: *too-ts-s-ta, tut, tut,* on a perfectly steady breath.

Brass and flute players should practise triple tonguing in this exercise, pronouncing the syllables *tutika,* very rapidly until the tones are of equal duration and volume. The third tone is apt to be very weak and much practice is necessary to master this style of articulation. Whisper *too-tutika, tut, tut,* using a perfectly steady breath.

Percussion—

Castanets should be struck against the knee of the player on the accented notes and shaken for the sixteenth-notes, producing an effect similar to the triplet figure played by the other instruments.

Strings—

String players should practise this bowing at both the frog and point. When playing at the point, the bow should be pressed after each staccato eighth-note. When playing at the frog, the bow should be lifted after each eighth-note.

CHAPTER XXI

§151. The Double-Dotted Quarter-Note

Exercise 39

The double-dotted quarter should be seven times as long as the sixteenth following. It is easier for the players to think of the sixteenth-note as a grace-note preceding the half-note which follows.

Winds and Percussion—

As indicated in the exercise.

Strings—

String players should use all but the last inch of the bow at the frog on the dotted quarter, up-bow, then stop the bow and press before playing the sixteenth-note. The sixteenth should be executed by the wrist and fingers alone. Another way to play this figure is to have the players lift their bows after the dotted note, poising it half an inch above the string and about three inches from the frog, striking the string with a short, quick wrist- and finger-stroke as a prefix to the following note.

§152. The Rhythmic Figure

(Ex. 40)

A combination of Exercises 21 and 32. It should be practised *f*, *p*, *ff* and *pp*.

Winds—

Wind players articulate *too-tut*, *tut*, using a perfectly steady breath.

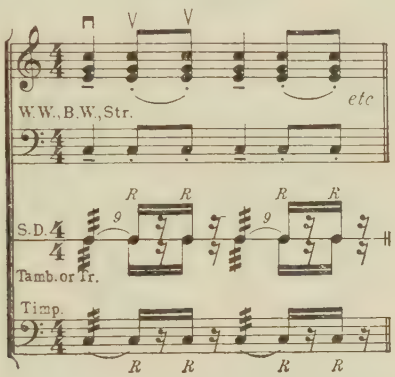
Percussion—

The snare drum has another nine-stroke roll. See Exercise 22.

STRINGS—

String players should practise this bowing at the point, frog and middle, each style presenting its particular difficulties. This bowing is so common that it must be mastered in all its phases before a player can succeed in an orchestra. When playing at the point the bow is stopped and pressed after each eighth-note. When playing at the frog the bow is lifted after each eighth. In the middle the problem is lifting the bow and replacing it without allowing it to bounce, or pressing it without allowing it to bounce or grunt. This figure occurs in Schubert's *Marche Militaire* with the quarter-notes heavily accented. It is played by using the lower half of the bow for the quarter, then lifting the bow after the first eighth and carrying it to within a few inches of the frog, where the second eighth is played with a quick wrist- and finger-stroke.

Exercise 40



§153. COMBINED FIGURES

Exercise 41

A combination of the figures in Exercises 21, 35 and 34.

WINDS—

Wind players should whisper *too, too-tu, tututu-too.*

PERCUSSION—

Cymbal player should hold the cymbals about three inches apart, then tip one laterally so that it strikes alternately the edges of the stationary cymbal in the triplet figure.

STRINGS—

String players should practise this figure using the upper half of the bow, then the lower half. Most strokes are more difficult to manipulate at the frog than at the point and this is no exception. When using the upper half of the bow, the bow should be stopped and pressure applied after the dotted eighth. When using the lower half, the bow should be lifted after the dotted eighth. The triplets are played legato, without lifting the bow.

§154. SYNCOPATED CHORDS

Exercise 42

A very common form of syncopation, easily understood but not so easily played. The *sforzando* is played like the *forte-piano* except that the *diminuendo* following the accent is less sudden (see §137).

WINDS—

Wind players whisper *tut, too-oo-tut, tut, too-oo-tut.*

PERCUSSION—

As indicated in the exercise.

STRINGS—

String players will experience difficulty in accenting the quarter-notes on alternate up- and down-strokes of the bow. Since the down-stroke is usually employed on accented tones the players should practise exaggerating the accents occurring on the up-stroke.

§155. ANOTHER FORM OF SYNCOPATION (EX. 43)

WINDS—

Wind players whisper *tut, too-too-too-tut.*

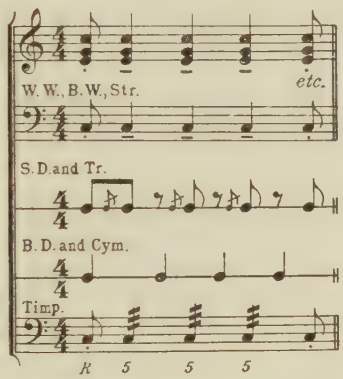
PERCUSSION—

The bass drum and cymbals carry the regular beat while the snare drum and tambourin play the syncopation with the other instruments.

STRINGS—

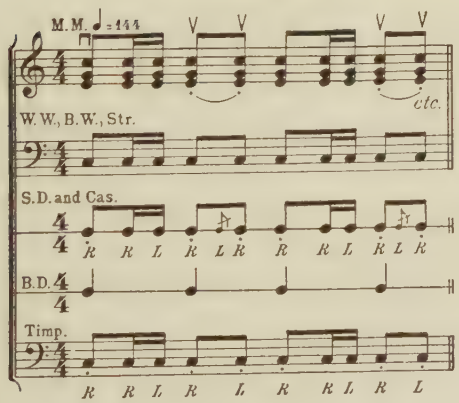
String players will have little difficulty if they play the eighth-notes legato, but if asked to play these notes staccato they encounter trouble immediately. They will discover that they cannot lift the bow and quickly replace it near the point without allowing it to bounce, so they must produce the same effect by stopping and pressing the bow. It is easy to lift the bow and replace it quickly very near the frog, but not far enough from the frog to permit them to play an accented quarter-note legato, so when playing the exercise near the frog the players must use at least a third of the bow on the first eighth-note, stop and press, then proceed with the quarter-notes which follow. They should practise this problem legato and staccato, at the point and at the frog.

Exercise 43



§156. THE RHYTHMIC FIGURE

Exercise 44



A common rhythmic march figure, requiring considerable skill to play correctly.

WINDS—

Woodwind players may have difficulty in tonguing rapidly enough. It is possible, however, and they should practise until they master this difficulty. They should not be permitted to attempt to double-tongue, which is impossible on reed instruments, where the tone is started by releasing the reed—something that cannot be done by closing the throat.

Brass and flute players have an exercise in double-tonguing here. This is performed by pronouncing the syllables *tuka, tuka* rapidly. It is impossible at a slow tempo—and equally unnecessary. Articulate *tut, tukatut, tut, tut, tukatut, tut.*

PERCUSSION—

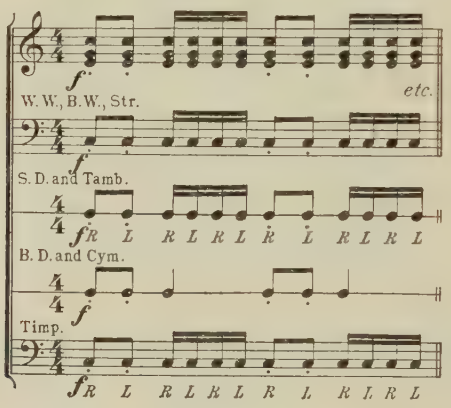
As indicated in the exercise.

STRINGS—

String players will find it easier to perform this exercise near the frog, lifting the bow after each eighth-note occurring on the up-bow. It should be practised near the point also.

§157. THE RHYTHMIC FIGURE ♫ ♬

Exercise 45



Two staccato eighths followed by four legato sixteenths.

WINDS—

Woodwind players will find this exercise much more difficult than Exercise 44 because four tones in rapid succession are fatiguing to the tongue. The best they can do is to try, for trying develops flexibility and speed.

Brass and flute players whisper *tut, tut, tukatukatut, tut, tukatuka.*

PERCUSSION—

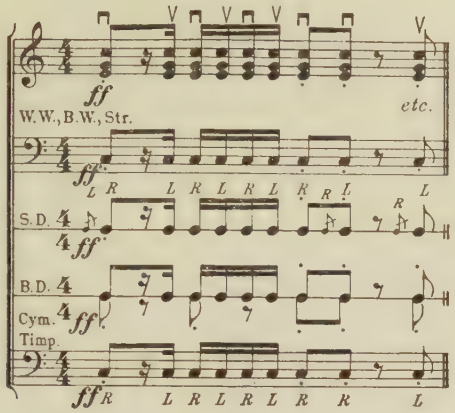
The snare drummer should not be allowed to substitute a roll for the four sixteenth-notes.

STRINGS—

String players will find this easier to play near the frog, lifting the bow after each eighth-note, but they should also practise it near the point and at the middle of the bow. The eighth-notes should also be practised legato.

§158. A Figure from *Finlandia*

Exercise 46



This rhythmic figure is encountered in *Finlandia* by Sibelius and has brought a tinge of grey to many an orchestra leader's head. It is best taught by having the players play an eighth-note in place of the eighth-rest at first, then leave out the note after the rhythmic pattern has been mastered.

Winds—

Brass and flute players whisper *tut, tutukatukatut, tut* (rest), *tut.*

Percussion—

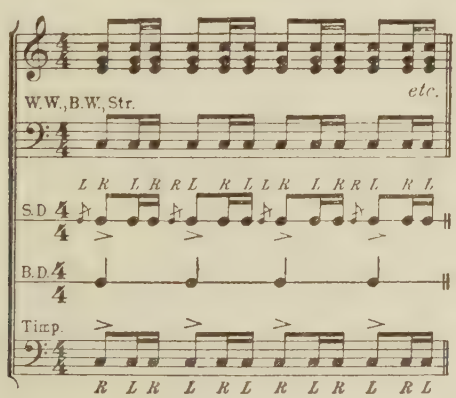
The snare drummer may have difficulty in executing the flam as written in the part (see Chapter XXII, §165).

Strings—

String players play near the frog, lifting the bow after the first note. The two successive eighth-notes marked down-bow present another difficulty. The bow is lifted and struck again at the same place (frog) by a swift movement of the wrist.

§159. The Rhythmic Figure

Exercise 47



This exercise should be practised *forte* and *piano*, also with accents on the eighth-notes.

WINDS—

Woodwinds as in Exercise 44 (§156).

Brass and flute players whisper *too-tukatoo-tukatoo-tukatoo-tuka* on a perfectly steady breath.

PERCUSSION—

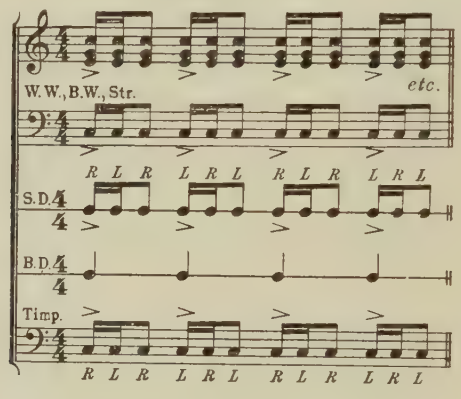
The snare drum has another exercise in what is called the "closed flam" (see §166).

STRINGS—

String players use a third of the bow with sweeping strokes executed by the wrist and forearm. They should practise using the upper third, middle third and lower third of the bow.

§160. THE PREVIOUS FIGURE, REVERSED

Exercise 48



WINDS—

Woodwinds as in Exercise 44 (§156).

Brass and flute players whisper *tukatoo-tukatoo-tukatoo*, etc.

PERCUSSION—

As indicated in the exercise.

STRINGS—

String players should accent the first note in each group of three, which occurs alternately on the up- and down-bow.

§161. THE TWO PREVIOUS FIGURES COMBINED (EX. 49)

WINDS—

As indicated in the exercise.

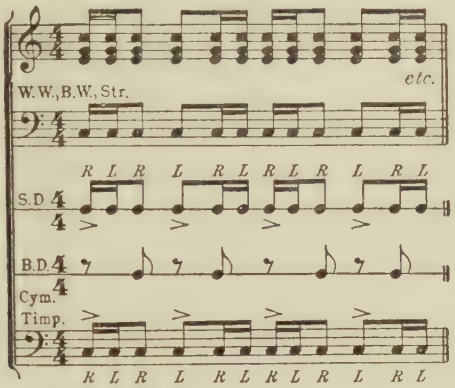
PERCUSSION—

The snare drummer and the timpani player should use separate strokes with alternate sticks in this exercise. Bass drum plays after-beats.

STRINGS—

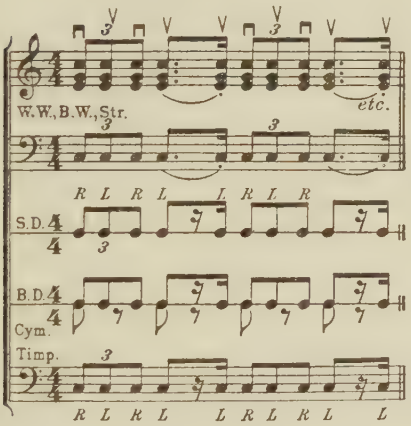
Use half the bow on the eighths and very short legato strokes on the sixteenths.

Exercise 49



§162. THE RHYTHMIC FIGURE

Exercise 50



A combination of the figures in Exercises 34 and 35.

WINDS—

Woodwinds as in Exercise 38 (§150).

Brass and flute players may practise this exercise at a very rapid tempo for practice in triple-tonguing, whispering *tutika too, tututikatoo, tu.*

STRINGS—

String players will find it easier to play this exercise near the point of the bow, using about six inches, and stopping the bow and pressing after each dotted-eighth. They should also practise it at the frog.

CHAPTER XXII

§163. General Instructions for Exercises 51 to 104

CHAPTERS XXII to XXV are devoted to the wind instruments and the instruments of percussion. All these may be rehearsed either together or in groups of various combinations. The exercises may also be assigned for individual practice and used for tryouts.

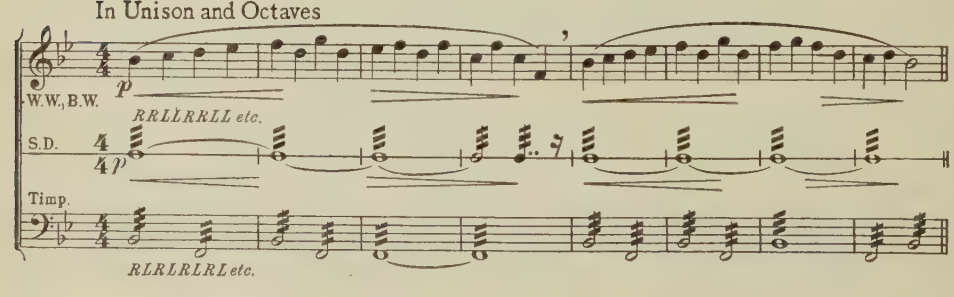
The bass drum and cymbal players should play the snare drum in the exercises that do not call for their instruments. Sectional rehearsals for the percussion instruments will be found most interesting and beneficial. The exercises are excellent for drum corps practice.

The exercises are presented in a way similar to that found in the preceding chapters. Exercise 51 consists of a tune of eight measures to be played in unison by all the wind instruments, accompanied by the percussion section, and Exercises 52 to 104 are different ways of playing this tune, the first two measures only being given, as a pattern to be followed out through the remainder of the exercise.

The exercises are given in the key that is simplest for the most instruments in order to minimize difficulties and allow the player to devote his whole attention to the problems presented. If the teacher wishes he may ask the players to transpose the exercises to different keys or to the key of the piece that is being studied; doing this will greatly augment their usefulness.

§164. Breathing Exercise

Exercise 51



Winds—

This exercise should be played softly and smoothly. Players should breathe only at the comma, allowing but one-half of the last count for taking breath (see Chapter VIII, §§44, 45). Players should also practise playing the entire exercise with one breath, then twice through in one breath, great care being taken that the breathing is done correctly.

PERCUSSION—

Snare drum: Players practise making an even roll, unbroken except for an instant at the point where the wind players take a breath. Players should endeavor to strike eight times to each count and observe the swells as marked. Snare drum roll consists of two strokes with each hand alternately struck. Players should think the syllables *dada, mama, dada, mama;* "*dada*" indicating the right hand and "*mama*" the left. Drummers should learn to count the number of strokes when playing the roll. Counting each individually is, of course, impossible but counting every fourth stroke is quite simple. At first the young player should start all rolls with the right hand, then as each group of four strokes begins with the right hand it is very easy to count the groups of four.

Timpani: Players should practise the "single roll" in which the sticks strike the head of the drum alternately while the snare drum roll consists of alternate groups of two strokes with each hand. Complete directions for playing these rolls will be found in the student's book for drums.

§165. STACCATO ATTACK

Exercise 52

Short staccato tones are very difficult to play in ensemble for the reason that some of the instruments respond more slowly than others and consequently some of the players must anticipate, starting the tone slightly ahead of the others so that the result is like one instrument playing. For example, if the bass drummer starts to move his stick at the same instant the clarinet player starts to move his tongue the clarinet tone will sound before the stick hits the drum. Likewise the tuba player must set into vibration a column of air many times greater than that of the clarinet player, so he must start each tone a fraction of a second before the latter if the tones are to sound at the same instant. This is a matter of minute fractions of a second but of sufficient importance to greatly affect the ensemble. Very little need be said about this to the players but exercises like this one should be practised in unison until the players learn to gauge their entrance according to the quickness of response of their particular instruments. As a general rule the brass instruments speak more slowly than the woodwinds or strings, and the percussion instruments are even slower in response. When players are

asked to anticipate they are apt to overdo it, which accounts for the fact that many bass drummers always play a fraction of a beat ahead of the band or orchestra, ruining the ensemble.

The acoustic properties of a stage or hall often make it necessary for the players in one part of the room or stage to anticipate.

WINDS—

Wind players keep the breath flow steady and whisper the syllable *tut* for each tone.

PERCUSSION—

Snare drum: This style of drumming is called the "flam." The effect should sound like a pair of shots fired almost simultaneously, the second one being much louder than the first. It is produced by holding one hand higher than the other and striking downward with both at the same time, the low stick striking first and the second following closely and much louder. It should be practised slowly at first, so the effect sounds like the word, *fa-lam*, then quickened until it sounds like its name, *flam*. Each stick should strike the head but once and should not be allowed to rebound or buzz. In this exercise the flam is passed from hand to hand. The high hand—the one playing the large note—should be raised as high as the shoulder and the other hand half as high. When playing softly the hands should not be raised as high. Few drummers raise their hands high enough when playing and consequently are not able to produce *fortissimo* effects.

Timpani: The player plays two strokes with each hand, damping the sound instantly after each stroke, with the other hand.

§166. RAPID LEGATO

Exercise 53

The effect should be almost like a sustained tone.

WINDS—

Wind players whisper the syllable *thu* lightly for each tone.

PERCUSSION—

Snare drum: Closed flam, from hand to hand. This is the same as Exercise 52 but much faster and should not be attempted before the former is mastered.

Timpani: This style is not common in timpani music but is good practice in handling the sticks. It is executed exactly like the flam in snare drumming, described in §165.

§167. Two Slurred Notes and Two Staccato Notes

Exercise 54

Winds—

Wind players whisper the syllables *too-oo tut, tut.*

Percussion—

Snare drum: Seventeen-stroke roll and flam. This roll starts and ends with the right hand, the left hand striking four times, the right striking five times. Have the players raise their sticks high and count the strokes. This is an effective "beat" for drum corps for marching.

Timpani: This slow roll, ending in a cross beat, is quite difficult for beginners, the difficulty consisting in striking the large drum with the right stick without making a break after the roll.

§168. The Preceding Figure Reversed

Exercise 55

Winds—

Wind players whisper the syllables *tut, tut, too-oo.*

Percussion—

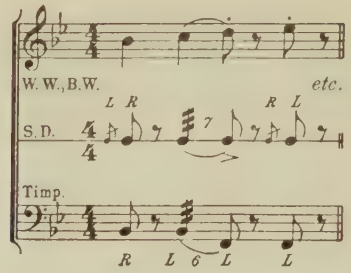
Snare drum: Right and left flam followed by a fifteen-stroke roll (see §164, §165 and §167 for directions).

Timpani: The reverse of Exercise 54, but much easier to play since the roll ends with the left stick and the next stroke is with the right.

§169. Slur to the Secondary Accent
(Ex. 56)

The second and third notes are slurred, the first legato and the second staccato.

Exercise 56



WINDS—

Wind players whisper the syllables *too-too-ut, tut,* etc., keeping the breath pressure steady and the jaw still, moving only the tip of the tongue.

PERCUSSION—

Snare drum: Flam, seven-stroke roll and flam. The seven-stroke roll is very common. Players should practise accenting the first and last strokes, which are played with alternate hands. They should sound like: *dada, mama, dada, mam.*

Timpani: Players will have difficulty performing the six-stroke roll rapidly enough, then playing the next stroke on the other drum. By starting the roll with the left hand this will be much easier.

§170. First Three Notes Slurred

Exercise 57

WINDS—

Wind players articulate as follows: *too-oo-oot, tut,* keeping a steady breath and firm jaw.

PERCUSSION—

Snare drum: The right hand starts and ends the seventeen-stroke roll, striking four groups of two and ending with a single, accented stroke. The succeeding flam ends with the left stick, bringing the right into position for the roll in the next measure.

Timpani: As in Exercise 56 the roll should start with the left stick in order to enable the player to end the roll with a stroke on the large drum.

§171. Last Three Notes Slurred
Exercise 58

This exercise should first be practised softly, then with the first tone *orte* and the other three *piano*.

Winds—

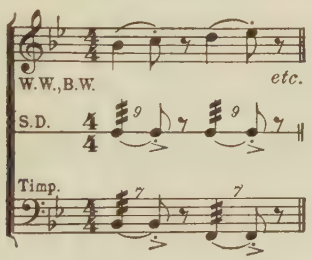
Wind players whisper the syllables *tut, too-oo-oo*, etc., using a steady breath.

Percussion—

Snare drum: The twenty-three-stroke roll starts with the right and ends with the left, without accenting the last stroke.

Timpani: The player must learn to continue the roll on the other drum without any break. Starting with the left stick makes this easier.

§172. Four Notes, Slurred in Pairs
Exercise 59



A legato tone, slurred to a staccato tone. The tendency is to accent the staccato tone and players should learn to avoid this. For practice they should over-emphasize the accent on the legato tones.

Winds—

Wind players whisper the syllables *too-oot, too-oot* without moving any muscle except the tip of the tongue, while maintaining a steady breath.

Percussion—

Snare drum: The nine-stroke roll is one of the most common forms, starting and ending with the same stick with a strong accent on the last stroke. In this exercise the first roll begins and ends with the right stick and the second begins and ends with the left. Alternate measures of Exercises 59 and 83 make an attractive drum corps beat for marching.

Timpani: The player has a seven-stroke roll with an accent on the last stroke. Since the timpani uses the single roll described in §164 the player cannot hope to make as smooth a roll as the snare drummer, but the difference in the size of the drum renders the effect almost as smooth.

§173. Seven Slurred Notes, the Last Staccato, Followed by a Single Staccato Note

Exercise 60

Winds—

Wind players whisper the syllables *too-oo-oo-oo-oo-oo-oot, tut*, accenting the first tone in each measure slightly.

Percussion—

Snare drum: This beat is called the "flam paradiddle," or "flama-diddle," and requires considerable dexterity in performance. The drummers should practise it slowly, raising the sticks high so that the leader can see if they are using the proper sticks as designated. The players may say the word *flamadiddle* as they play at first. This beat is not possible at a rapid tempo.

Timpani: The player has a sustained roll alternating between the two drums.

§174. Two Eighth-Notes, Slurred

Exercise 61

Winds—

Wind players should whisper the syllables *too-too-oo, too-too-oo,* etc. The wind players may also practise playing the quarter-notes staccato, using the syllables, *tut, too-oo-tut, too-oo.*

Percussion—

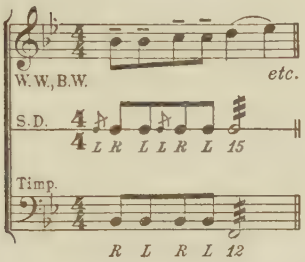
Snare drum: This beat is called the "paradiddle" and the beat should sound like its name. Watch the players' sticks as they play and see that they follow the markings indicating which stick to use on each stroke. See that they raise the sticks high and observe the accents.

Timpani: The player has a new difficulty in what is called the "cross beat," where the right hand crosses the left as the first stroke on the large drum is played.

CHAPTER XXIII

§175. Four Legato Eighth-Notes Followed by Two Slurred Quarters

Exercise 62



Winds—

Wind players should try to make the eighth-notes sound almost as though they were slurred, by pronouncing the syllables *thoo-thoo-thoo-thoo-too-oo.*

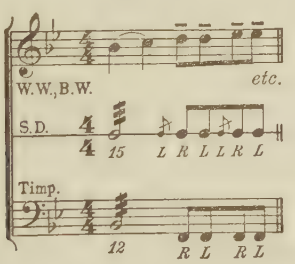
Percussion—

Snare drum: This is a combination of the flam, single-stroke and fifteen-stroke roll. The sticks should be raised high for the first four strokes.

Timpani: As indicated in the exercise.

§176. The Preceding, Reversed

Exercise 63



§177. Rapid Staccato Notes (Ex. 64)

This exercise is played exactly like Exercise 52 except that each tone is reiterated.

Exercise 64

WINDS—

The breath pressure should be steady and the jaw should not move.

PERCUSSION—

Snare drum: This is the closed flam, hand to hand, the same as in Exercise 53.

Timpani: The player has an exercise in the cross beat (see Exercise 61). He should practise this exercise much more rapidly when practising alone.

§178. THREE SLURRED NOTES FOLLOWED BY TWO STACCATO NOTES

Exercise 65

WINDS—

Wind players articulate *too-oo-oo-tut, tut.* See that the wind players do not cut the third note short and that they maintain a steady breath pressure.

PERCUSSION—

Snare drum: This roll (twenty-five-stroke) begins and ends with the same stick, with an accent on the last stroke. There are eight strokes to each count, each stick making two double strokes to each count.

Timpani: As indicated in the example.

§179. THE PRECEDING, REVERSED

(Ex. 66)

WINDS—

Wind players whisper *tut, tut, too-oo-oo.*

PERCUSSION—

Snare drum: Two flams and a twenty-three-stroke roll without an accent at the end of the roll.

Timpani: Two single beats, accented, followed by a roll which should be continuous when changing from one drum to the other.

Exercise 66

§180. One Legato, Four Staccato, One Legato

Exercise 67

Winds—

Wind players articulate *too-tut, tut, tut, tut, too.* Watch the wood-wind players and see that they do not move their jaws when playing the staccato tones. If they do, have them practise Exercises 53 and 64 very rapidly at first, then slower by degrees while they watch themselves in a mirror. When tonguing very rapidly these players cannot move their jaws rapidly enough, consequently they articulate correctly. By slowing down gradually while watching themselves in a mirror they will correct this fault very readily in a short time. When the jaw is permitted to assist in the articulation the tone usually starts somewhat below the pitch and slides up. This is an effect used by most jazz artists and which has a place in jazz music; however, a good jazz player only uses this effect occasionally (see Appendix A).

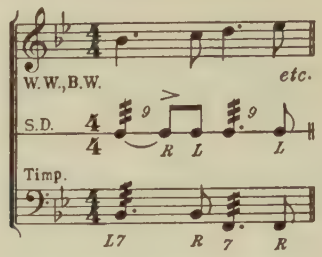
Percussion—

Snare drum: Nine-stroke roll ending in an accent, followed by three single-strokes with the sticks raised high. The eight-stroke roll on the last count should be slurred into the nine-stroke roll in the measure following. Exercises 64 and 67 may be combined into an attractive drum corps beat.

Timpani: The player may find it easier at first to practise using four instead of six strokes on the first and last counts.

§181. Dotted-Quarter Followed by an Eighth

Exercise 68



See that the players give each tone its exact value.

Winds—

Wind players should practise this exercise legato and staccato, also with the dotted quarter legato and the eighth staccato. When playing this exercise legato the players should articulate *too-oo-oo-too*, etc. When playing it staccato they should articulate *tut* (rest, rest), *tut*, etc. When playing the first tone legato and the second staccato the articulation should be *too-oo-oo-tut*, etc.

Percussion—

Snare drum: Nine-stroke roll, ending in an accent, followed by a single stroke. The second half of the measure is played exactly like the first half, though notated differently.

Timpani: The player may practise the double-stroke roll with this exercise if he has mastered the single-stroke roll by this time. The double-stroke roll is exactly like the snare drum roll but is less effective when played on kettle drums, the unevenness being more pronounced.

§182. Double-Dotted Quarter Followed by a Sixteenth

Exercise 69

The first tone should be seven times as long as the second. Players should learn to mentally divide each count into four parts when playing the sixteenth-notes in order to give each note its exact value.

Winds—

Wind players must keep a steady breath when playing this exercise, articulating as follows: *too-u-u-u-u-u-u-tu*, etc. There should be no pulsations during the sustained tones. The above example is meant to convey the idea of keeping the rhythm in mind and should not be mistaken as meaning that each repetition of the letter *u* should receive a push or pulsation.

PERCUSSION—

Snare drum: Thirteen-stroke roll ending in a slight accent, followed by a quick single stroke. This is a comparatively simple beat to learn.

Timpani: The exact number of strokes is not of superlative importance here but the player must sound the single strokes distinctly with the left stick.

§183. THE REVERSE OF EXERCISE 61

Exercise 70

WINDS—

Wind players articulate *too-oo-too, too-oo-too* when playing legato. They may also practise this exercise by playing the second eighth in each pair staccato, the articulation being *too-oot, too—too-oot, too.*

PERCUSSION—

Snare drum: Flam and single stroke, alternated. See that the players use the sticks as directed and that they raise them high on the flams.

Timpani: As indicated in the exercise.

§184. ONE LEGATO AND TWO STACCATO NOTES

Exercise 71

WINDS—

Wind players should practise this exercise as written, also by accenting the quarter-notes strongly but with a steady breath. Wind players whisper the syllables, *too-tut-tut.*

PERCUSSION—

Snare drum: As in Exercise 68.

Timpani: As indicated in the exercise.

§185. The Same, with Wind Parts Notated Differently

Exercise 72

Winds—

Wind players may also practise playing the eighth-notes legato instead of staccato, whispering the syllables *thoo-thoo-thoo-thoo-thoo-thoo.*

Percussion—

Snare drum: Five-stroke roll, followed by two flams. See that the players start the second roll with the left stick and that their hands move up and down as one while playing this exercise. This is an excellent beat for drum corps.

Timpani: The player's hands should move with those of the snare drums. The timpani player may also practise using the five-stroke roll (double-stroke roll) with the snare drums.

§186. Four Eighth-Notes; First and Last Staccato, Two Middle Slurred

Exercise 73

Winds—

Wind players should accent the first tone in each group of four, whispering the syllables *tut, too-oo, tut, tut, too-oo, tut.*

Snare drum: See that the players start the first roll with the left stick as indicated, and the second roll with the right.

Timpani: As indicated in the exercise.

§187. A Combination of Exercises 71 and 53 (Ex. 74)

Winds—

Wind players whisper the syllables *thoo-thu-thu-thoo*—. They may also practise playing the eighth-notes staccato, articulating *too-tut, tut, too*—.

PERCUSSION—

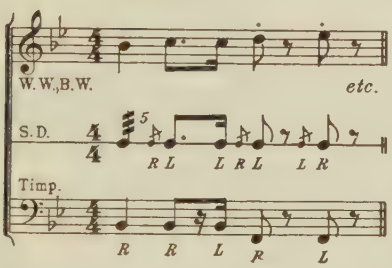
Snare drum: The first half of the measure is similar to Exercise 72, the last half being a thirteen-stroke roll.

Timpani: The player should try to get in twelve strokes on this roll.

Exercise 74

§188. A COMMON MARCH FIGURE

Exercise 75



The first tone should receive a rather strong accent.

WINDS—

Wind players articulate as follows: *too-too-tutut, tut.* They may also practise playing the dotted eighth staccato, thus: *too-tut, tutut, tut.*

PERCUSSION—

Snare drum: As indicated in the exercise.

Timpani: Another exercise in cross beats.

CHAPTER XXIV

§189. Quarter Followed by Four Sixteenths

Exercise 76

The quarter-note should be played legato and the sixteenth-notes staccato.

Winds—

Woodwind players may have difficulty in tonguing rapidly enough and they should practise for the purpose of gaining speed in articulation, whispering the syllables *too-tutututu.* Rapid tonguing is possible when only the tip of the tongue is used in articulation and when the jaw does not move. Players who have difficulty in doing this should have special help in correcting these faults. Players of reed instruments should always articulate by touching the tip of the tongue to the tip of the reed. Some players do this naturally. Others need to be taught. Brass and flute players may double-tongue if the tempo is rapid enough to enable them to do so, articulating *too-tukatuka-too-tukatuka.* They should also practise the exercise using the articulation given for wood-winds above (single-tongue). Every brass and flute player should learn the exact speed with which he can single-tongue so that he may judge accurately whether to single-, double- or triple-tongue when he sees the notes. Double- and triple-tonguing are both makeshifts and should not be used unless the speed is too rapid to single-tongue.

Percussion—

Snare drum: Seven-stroke roll followed by four single strokes. See that the seven-stroke roll always begins and ends on different sticks.

Timpani: As indicated in the exercise.

§190. The Preceding, Reversed

Exercise 77

Winds—

Wind players articulate *tukatuka-too*, etc., or as indicated for woodwinds.

Percussion—

The reverse of Exercise 76.

§191. Successive Sixteenth-Notes

Exercise 78

Winds—

This exercise should be played staccato and legato by the wind players, and at various speeds.

Woodwind players, except flutes, will be unable to articulate at a tempo faster than about 100 counts to the minute. They should be able to play somewhat faster when playing legato than when playing staccato because the tongue does not tire so rapidly in playing legato. Some of the woodwind players may be able to double- and triple-tongue when playing the lower notes of their registers, by articulating as the brass and flute players do. These should practise both ways.

Brass and flute players should practise single- and double-tonguing on this exercise according to the speed with which it is played (see Exercise 76 for articulations). These players should practise this exercise slowly at first, increasing the speed gradually until single-tonguing is no longer possible, then change to double-tonguing. The latter should sound as regular and even as the former. Another way for the brass and flute players to play this exercise is to single-tongue the first four notes and double-tongue the next four, etc., making both articulations sound the same. When practising this last way the articulation should be: *tutututu, tukatuka, tutututu, tukatuka*, etc.

PERCUSSION—

Snare drum: The flamadiddle, described in Chapter XXII, §173.

Timpani: An excellent exercise in cross beats. See that the player uses the sticks as directed.

§192. ANTICIPATED ACCENTS

Exercise 79

WINDS—

Wind players articulate as follows: *tututututoo-ut*, *tututoo-ut*, etc. Brass and flute players should not double-tongue on this exercise.

PERCUSSION—

Snare drum: This beat is called the "drag," or more specifically, the open drag. The two grace-notes should be sounded distinctly with one stick while the other stick plays the larger note as in the flam, the only difference being that the drag has two grace-notes preceding the accent while the flam has but one. This is a good drum corps beat.

Timpani: As indicated in the exercise.

§193. THE DRAG APPLIED TO EXERCISE 47

Exercise 80

WINDS—

As indicated in Exercise 47 (Chapter XXI, §159).

PERCUSSION—

Snare drum: Another exercise emphasizing the drag (see §192).

Timpani: See that the eighth-notes receive accents of equal power. The tendency is to strike with more power with the right than with the left stick.

§194. The Drag Applied to Exercise 44
Exercise 81

Winds—

As indicated in the exercise.

Percussion—

Snare drum: Another exercise on the drag. Exercises 81 and 78 combined make a good drum corps beat.

Timpani: As indicated in the exercise.

§195. Slurred Groups of Four Sixteenths
Exercise 82

Players should accent the first tone in each group.

Winds—

Wind players may practise playing each group twice in double time as an exercise in trilling.

Percussion—

Snare drum: This beat is called the "closed drag," and is played from hand to hand raising the hands high. Exercises 82 and 71 may be combined effectively for drum corps beats.

Timpani: Players will find this an excellent exercise in cross beats.

§196. Staccato Triplets
(Ex. 83)

Winds—

Wind players may practise this exercise legato and staccato, slow and fast, though the speed at which the woodwinds can execute is limited (see §191).

Brass and flute players may practise this exercise very rapidly, for practice in triple-tonguing, articulating as follows: *tutika, tutika, tutika, tutika*, etc.

PERCUSSION—

Snare drum and timpani: Observe the accents, raising the stick higher for the accented beats than for the others.

Exercise 83

§197. SLURRED TRIPLETS

Exercise 84

WINDS—

There are different notes and slurs for the wind players. The players should accent the first tone in each group.

Brass and flute players may practise this exercise without the slurs, at a rapid tempo, for practice in triple-tonguing (see §196).

PERCUSSION—

Snare drum: Players will find this combination of the flam and drag quite difficult to master. The accents should be exaggerated at first.

Timpani: Players have a new problem in cross beats. They should also exaggerate the accents at first.

§198. TRIPLETS OF SIXTEENTH-NOTES

Exercise 85

The first tone should be staccato, while the next three notes should have the same time value as the first note.

WINDS—

Woodwind players unable to triple-tongue are given a figure which is easy for them and very common in their music.

Brass and flute players have an excellent study in triple-tonguing here, articulated, *tut, tutikatut, tutikatut,* etc.

PERCUSSION—

Snare drum and timpani: Observe the accents carefully.

§199. SLURRED GROUPS OF SIXTEENTH-NOTES

Exercise 86

A rapid fingering exercise for the winds, slurred in groups of four notes, in $\frac{2}{4}$ time. The notes should be of equal duration and the exercise should be played with very slight accents.

WINDS—

Wind players may practise playing the entire exercise in one breath, then the entire exercise twice in one breath.

PERCUSSION—

Snare drum and timpani: Play single strokes. See that they do not do otherwise. Drummers like to play all their tricks all of the time and it is difficult to keep them down when they have a simple part to play.

§200. EXERCISE 54, WITH SPEED QUADRUPLED

Exercise 87

WINDS—

At this tempo the articulations are not as clearly defined as in Exercise 54. All wind instruments should single-tongue the staccato tones as follows: *too-tututoo-tutu,* etc.

Brass and flute players may practise double-tonguing in this exercise when practising at home (see §189).

PERCUSSION—

Snare drum: This is really a five-stroke roll followed by a single beat. It is often written this way without the number showing how many strokes, and the drummer must learn to recognize the various rolls without the aid of numbers or letters.

CHAPTER XXV

§201. Four Legato and Four Slurred Notes

Exercise 88

Winds—

Wind players should whisper the syllables *thu-thu-thu-thu-thoo*—, etc. They may also practise playing the first four notes staccato as in Exercise 77.

Percussion—

Whether the snare drummers can play the sixteen-stroke roll in time depends upon the tempo given by the conductor. The number of strokes in a roll of the duration of more than one count is not important, the general effect depending more upon the smoothness of the roll than on the number of strokes. In the preceding exercises a specified number of strokes has been given for the purpose of nipping in the bud the tendency to carelessness common to young drummers.

§202. Syncopation

Exercise 89

The eighth-notes should be played staccato and the quarters legato.

Winds—

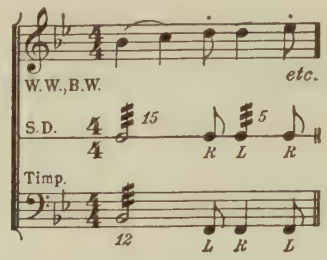
Wind players articulate *tut, too-tut, tut, too-tut,* etc.

Percussion—

The statement in §201 does not apply to the seven-stroke roll, nor the five- or nine-stroke rolls. These should be learned as such and played with exactness when called for in the music.

§203. Exercises 54 and 89 Combined

Exercise 90



Winds—

As indicated in the exercise.

Percussion—

Snare drum: The five-stroke roll in the first measure begins with the left stick. In the second measure the sticks used are the reverse of those used in the first measure.

Timpani: Players must so time the roll as to have the left stick ready at the proper moment to strike the large drum on time.

§204. The Preceding with Different Phrasing

Exercise 91

Winds—

As indicated in the exercise.

Percussion—

Snare drum: Any roll ending on an accented beat by the hand which began the roll may be substituted for the seventeen-stroke roll. The more rapid the strokes, the smoother the roll will sound. The players may practise using the 9-, 13-, 17-, 21- and 25-stroke rolls in this exercise.

Timpani: As indicated in the exercise.

§205. Syncopation Throughout the Measure

(Ex. 92)

As usual the eighth-notes are played staccato. If the players have difficulty in understanding this rhythm they may practise giving each quarter a "push" on its second half, thus: *tut, too-oo, too-oo, too-oo, tut,* until the rhythm is understood, when this makeshift should stop and the syncopation practised as such.

WINDS—

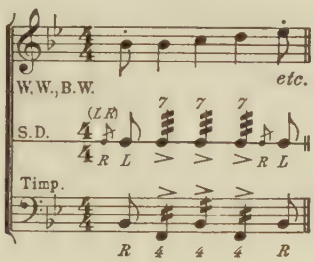
As indicated in the exercise.

PERCUSSION—

Snare drum: These seven-stroke rolls begin with alternate sticks. Each roll should be heavily accented on the first stroke.

Timpani: The player plays even sixteenth-notes, raising the sticks high.

Exercise 92



§206. THE PRECEDING, WITH SLURS

Exercise 93

WINDS AND PERCUSSION—

As indicated in the exercise

§207. THE RHYTHMIC FIGURE OF EXERCISE 89, PHRASED DIFFERENTLY

Exercise 94

WINDS—

Wind players should end each slur with a staccato accent.

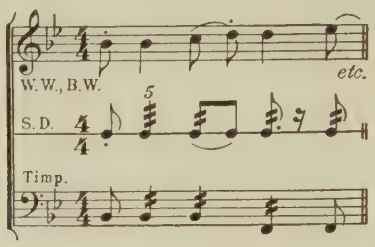
PERCUSSION—

Snare drum: The last stroke of each roll should be strongly accented. If played as indicated the rhythm will be the same as that of the other instruments.

Timpani: Players should start each roll with the stick that played the eighth-note preceding the roll.

§208. Another Phrasing of Exercise 89

Exercise 95



Winds—

Wind players end each slur with a staccato accent, articulating: *tut, too-oo-too-oot, too-oo-too,* etc.

Percussion—

Snare drum: This is a practical use for the five-stroke roll. Compare this exercise with Exercise 92.

Timpani: As in Exercise 92.

§209. Exercises 89 and 55 Combined

Exercise 96

Winds—

Wind players articulate *tut, too-oo-tut, too-oo,* etc.

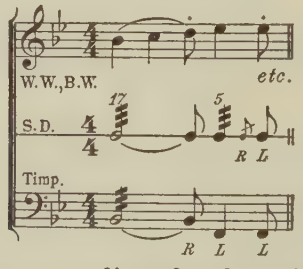
Percussion—

Snare drum: As indicated in the exercise.

Timpani: The player should start the roll with the right stick.

§210. The Preceding, Reversed

Exercise 97



Slur the first three notes, ending the slur with a staccato accent.

WINDS—

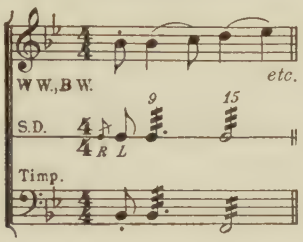
Wind players articulate *too-oo-oot, too-tut,* etc.

PERCUSSION—

As indicated in the exercise.

§211. EXERCISE 96, PHRASED DIFFERENTLY

Exercise 98



WINDS—

Wind players articulate *tut, too-oo, too-oo,* etc.

PERCUSSION—

As indicated in the exercise.

§212. EXERCISES 75 AND 97 COMBINED

Exercise 99

WINDS—

Wind players articulate *too-too-tutut, too-oo, tut,* etc.

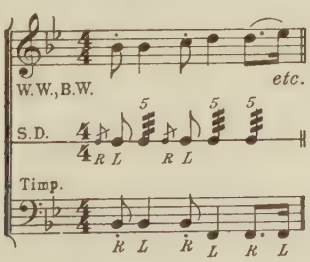
PERCUSSION—

Snare drum: Here is a complicated exercise which will require some concentration and practice. The accents should be brought out strongly.

Timpani: As indicated in the exercise.

§213. THE PRECEDING, REVERSED

Exercise 100



WINDS—

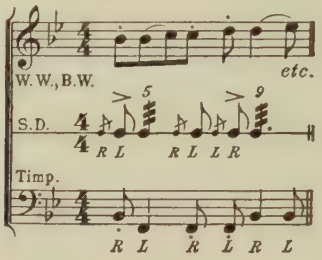
Wind players articulate *tut, too-tut, too-too-oo,* etc.

PERCUSSION—

As indicated in the exercise.

§214. EXERCISES 73 AND 93 COMBINED

Exercise 101



WINDS—

Wind players articulate *tut, too-oo, tut, tut, too-oo,* etc.

PERCUSSION—

Snare drum: Players will have difficulty in bringing out the syncopated rhythm and in giving the number of strokes indicated for the rolls.

Timpani: As indicated in the exercise.

§215. EXERCISE 73 WITH DIFFERENT PHRASING

Exercise 102

The slurring is in groups of two, except the first tone.

WINDS—

Wind players may practise this in two ways; by ending each slur staccato and by ending each slur legato. Articulations: *tut, too-oot, too-oot,* etc., or: *tut, too-oo-too-oo-too-oo,* etc.

PERCUSSION—

Snare drum: Each roll should start and end with a distinct accent.

Timpani: As indicated in the exercise.

§216. Syncopated Phrasing
Exercise 103

This is a phrasing problem which is complicated enough to confuse professional musicians, though by no means uncommon in lighter forms of music. Players should not attempt this until they have mastered the other forms in this book, then they will have become familiar enough with syncopation in general to enable them to understand some of the jazz tricks.

Winds—

As indicated in the exercise.

Percussion—

Snare drum: As indicated in the exercise.

Timpani: It is usually preferable to play the accented beats with the right stick as indicated here, even if it is necessary to strike more than once in succession with one stick as in this instance.

§217. Another Form of the Preceding
Exercise 104

Another perplexing problem in syncopation for the benefit of students who are members or expect to become members of dance orchestras.

To better understand the rhythm the players may play this exercise without observing any of the slurs or ties, then have half of the students observe the slurs and ties while the other half play all the notes detached, legato or staccato.

Percussion—

Snare drum: This part is the easiest; it is merely a repetition of flam, five-stroke roll, flam, five-stroke roll, etc.

Timpani: The player has no rhythmic problem but is concerned with an array of cross beats that will tax his agility. He should exaggerate the accents for the benefit of the other players as well as for himself.

§218. Velocity Exercise

All the instruments play in unison, the percussion parts being played by xylophone or bells.

Exercise 105

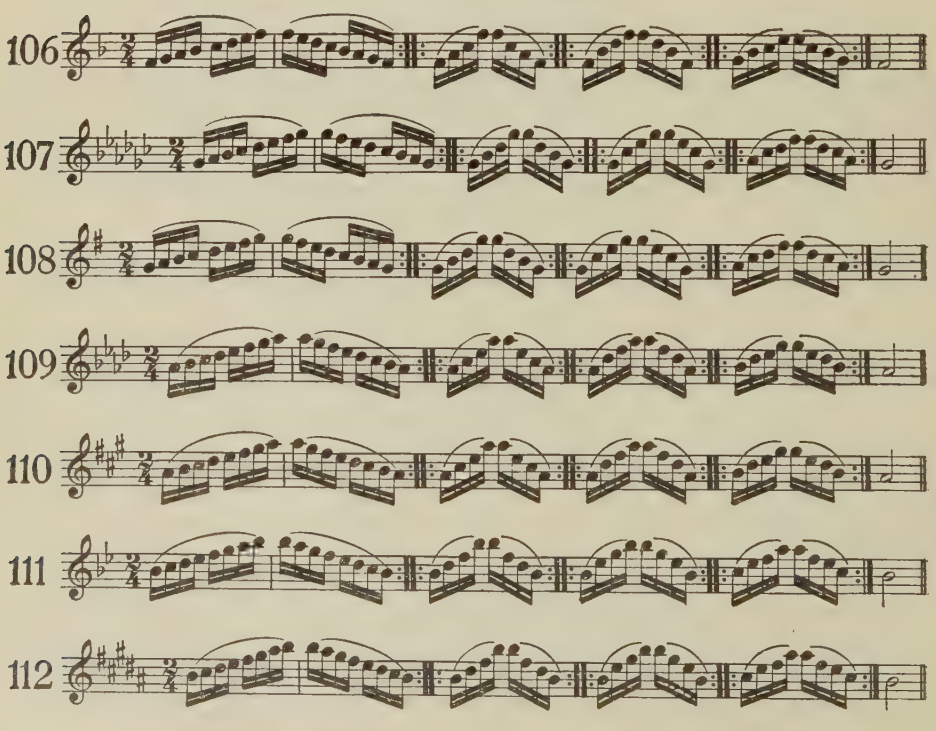
Transpose 1 step higher, 2 steps higher, 2½ steps higher, 1 step lower, 1½ steps lower, 2½ steps lower.

§219. Scales and Arpeggios

Following is a set of major and minor scales and arpeggios in all the keys, bearing the exercise numbers 106 to 146. Nos. 106 to 130 consist of the simple scales and arpeggios, and Nos. 131 to 145 represent different ways to play the scales. Exercise 146 is the chromatic scale, and may be used as the leader wishes. Like Exercise 105, all these are played in unison, the percussion players playing xylophone or bells.

Exercises 106-146

Major Scales and Arpeggios



113

114

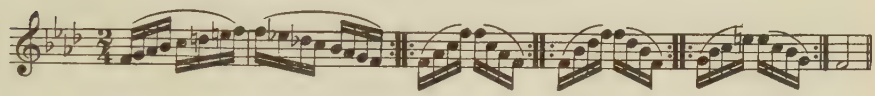
115

116

117

Minor Scales and Arpeggios

118



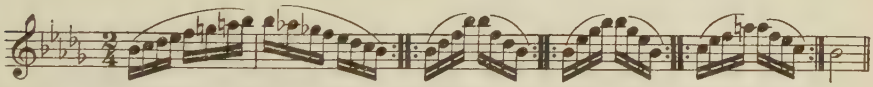
119

120

121

122

123



124

125

126

127

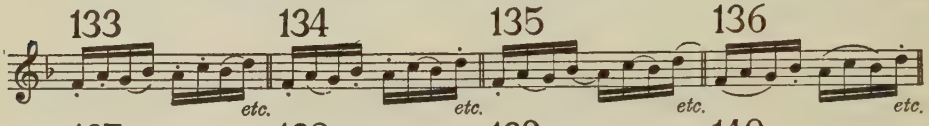
128

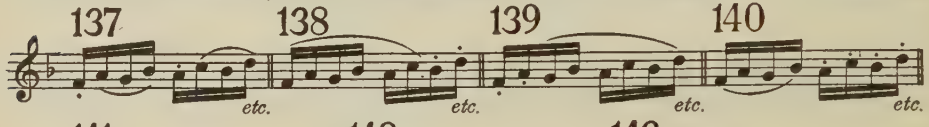
129

130

Ways to play the foregoing scales:

131





144

Chromatic Scale

146

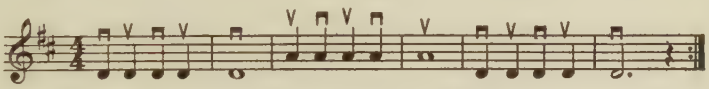
CHAPTER XXVI

§220. General Instructions for Exercises 147 to 323

CHAPTERS XXVI to XXX are devoted entirely to the string section. The exercises represent all of the important phases of technique used by string players in an orchestra. Only the violin part is given in the text; violas, cellos and basses play in unison, except in some places where the bass part is inverted. The exercises may be practised by the entire string section at sectional rehearsals, or they may be used for tryouts. Nos. 147 to 323 apply wholly to strings, and cannot be used with any other exercises in the students' books.

§221. Saving the Bow

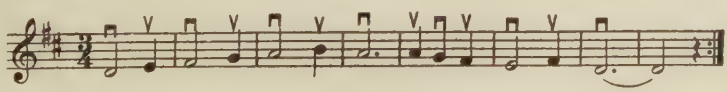
Exercise 147 W. B.[1]



Use whole bow for each note. Save the bow at the beginning of sustained tones. The student should place a white mark at the middle of the bow on the side which faces him when playing, and two others at equal distances from the middle to each end. By watching these marks pass his eye he will learn to estimate the amount of bow he is using much more accurately. Players should use the entire length of the bow for every tone *always keeping the bow at right angles with the string.* This necessitates drawing the bow more slowly on the four-beat notes than on the one-beat notes. The players should use only one-third of the bow in playing the first three beats of each whole-note, saving the other two-thirds of the bow for the final count. This will give the entire tone an equal volume with a velvety quality so seldom heard in amateur orchestras. This exercise will double the tone volume of the string section in a few weeks of diligent practice.

§222. The Same, in Triple Time

Exercise 148 W. B.



[1] W. B., whole bow.
U. H., upper half.
L. H., lower half.
Pt., point.
M., middle.
Fr., frog.

Have the players use one-third of the bow on the first count of each half-note, saving the remaining two-thirds for the last count. The final five-beat note should be so divided that the first three beats are played with one-third of the bow, imparting a singing quality to the final two counts.

§223. Crossing the Strings

Exercise 149 U. 3rd

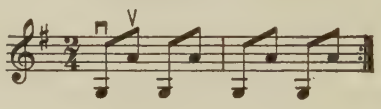
Violin, viola: Players should practise this exercise with a book under the right arm to hold the upper arm in place and force the wrist and forearm to work properly. This exercise is most valuable in the early stages of learning, to train the student to relax his muscles when playing. Violin, viola and cello players may practise this exercise at the frog as well, as this necessitates a plastic grip on the bow.

Cello: Players should practise this exercise with a shoe box or other light box about three inches thick under the right arm.

Bass: Players should hold the right elbow still and play this exercise with the forearm alone. They may also practise it using very short strokes at the point of the bow, executed with the wrist.

Exercise 150 is the same problem in a faster rhythm. Use the upper half of the bow.

Exercise 150



§224. Slurred Tones on Three Strings

Exercise 151 Pt.

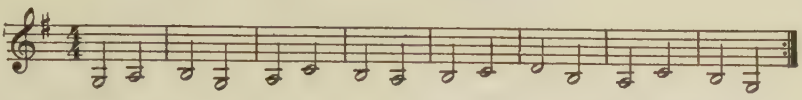
Players should use the six inches of bow nearest the point and should make all the tones of equal length and power.

Violin, viola, cello: Players should move their wrists as loosely as though they were waving handkerchiefs. They may practise this exercise with books under their arms if their wrists do not work properly.

Bass: Players play the same notes in reverse order. For them it is an exercise for developing a loose forearm and wrist, the forearm doing most of the work.

§225. Whole Bow on Half-Notes

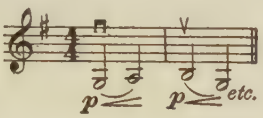
Exercise 152 W. B.



This exercise is the model to be used in practising Exercises 153 to 180. It should be played slowly, then fast, and with whole bow until memorized, before the other bowings are used.

§226. Two Half-Notes in One Bow

Exercise 153 W. B.



Whole bow for all instruments, using one-fourth of the bow on the first note of each pair and the remainder on the second note. Start each stroke softly and increase the volume as the bow advances.

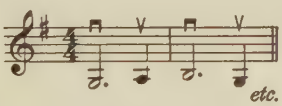
§227. The *Grande Détaché*

Exercise 154 (*a*) W. B., (*b*) U. H., (*c*) L. H.

Make the notes and rests of equal time value. This exercise should be played with the whole bow, upper half of the bow, and lower half of the bow. When using half of the bow the exercise should be played softly.

§228. Separate Bows, Notes of Different Values

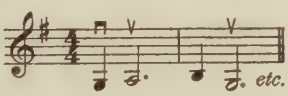
Exercise 155 W. B.



Bow saving exercise. Use whole bow on each tone, saving bow at the beginning of each dotted half-note.

§229. The Preceding, Reversed

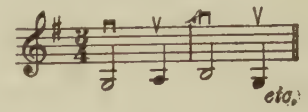
Exercise 156 W. B.



Use whole bow on the quarter-note and save bow at the beginning of the dotted half.

§230. Separate Bows, Triple Meter

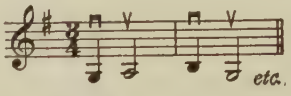
Exercise 157 W. B.



Bow saving exercise. Use full bow for each tone. Do not accent the quarter-notes.

§231. The Preceding, Reversed

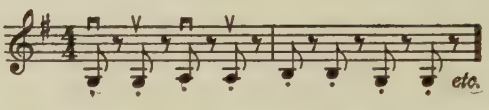
Exercise 158 W. B.



See that the players use full bow on the quarter- as well as the half-note.

§232. The *Martelé*

Exercise 159 (*a*) Pt., (*b*) M., (*c*) Fr.



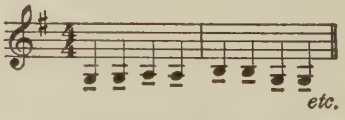
This stroke is executed by pressing the bow against the strings and relaxing the pressure just as the bow begins to move, no pressure being used while the bow is in motion.

Violin, viola, cello: Players execute this bowing with the wrist and fingers, using from four to six inches of the bow for each stroke. This exercise should be practised at the point of the bow at first, then at the middle and at the frog, the latter being the most difficult. An excellent way to practise this bowing is to stand or sit in such a position that the right forearm rests against a window frame, chair or other stationary object, forcing the wrist and fingers to do the work.

Bass: Players also play this bowing with the wrist but in a different manner, the pressure being applied by the thumb and index finger and the wrist bending out and in as the strokes are made.

§233. Legato Quarter-Notes

Exercise 160 (*a*) W. B., (*b*) U. H., (*c*) L. H.



This exercise should be practised in the three ways indicated.

Violin, viola, cello: When played with the whole bow, the bow should move at right angles with the string always and the bow should be held very loosely. The wrist should start and finish every legato tone by drawing the bow a little further after the arm ceases to move. It is this

"finish" that distinguishes the playing of the artist from that of the amateur. When playing legato near the frog the players will have difficulty in keeping the tone steady, the reason being that they have not learned how to use the little finger in balancing the bow. The tip of the little finger should rest on the stick and is used to counterbalance the weight of the bow when playing near the frog. It is also more difficult to guide the bow at right angles with the string when playing near the frog.

Bass: Players should see that the bow crosses the string at right angles at all times. Very often the end pin is not long enough to bring the bass into the proper playing position. If the player needs to bend his body in order to make the bow cross the strings at right angles the end pin in the bass should be lengthened.

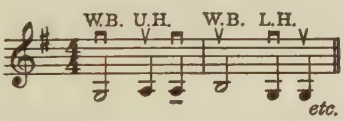
§234. The Same, in Quicker Rhythm

Exercise 161 (*a*) U. H., (*b*) L. H., (*c*) M.

Players should practise this exercise as indicated, using as little arm movement as possible and as much wrist movement as possible. See that the bass players hold their forearms perfectly still and use only the wrists.

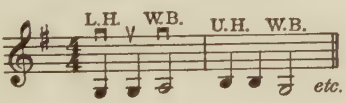
§235. Whole-Bow Followed by Two Half-Bows

Exercise 162



The tone should be smooth and of uniform power. The bow should be at right angles with the strings at all times. If the tone is scratchy or "fuzzy" it is because the bow slides up and down the strings instead of crossing at the same point throughout the length of the bow. Exercise 163 is the same, reversed.

Exercise 163



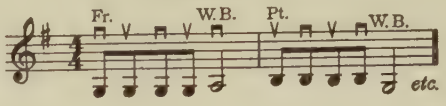
§236. Wrist and Finger Flexibility

The three following exercises are designed to develop the combined wrist- and finger-stroke at the frog and point of the bow. The long notes should receive whole bow and the short notes should be played alternately at the point and frog.

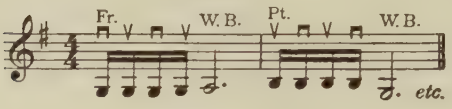
Violins, violas, cellos and basses should execute the short strokes with the wrist and fingers alone.

These exercises should be practised both soft and loud.

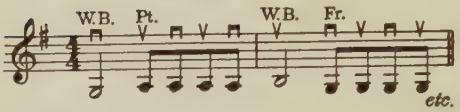
Exercise 164



Exercise 165

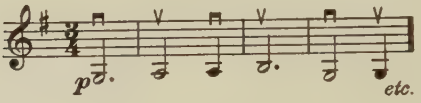


Exercise 166

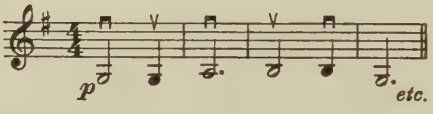


§237. Uniform Dynamics on Different Note-Values

Exercise 167 W. B.



Exercise 168 W. B.



These exercises should be played very softly, with equal power on every tone. The difficulty lies in using the same amount of bow on long and short tones without making the short tones sound louder than the long ones. This is done by using less pressure on the short tones.

Violin, viola, cello: Players do this by pressing the bow with the little finger, thus lifting the weight of the bow from the strings.

Bass: Players merely turn the wrist slightly away from the bass, using a minimum of pressure to start the string vibrating, then using no pressure whatever, while the bow is being drawn.

All players should use whole bow for every note in this exercise.

§238. Half-Bow on Each Note

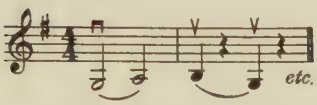
Exercise 169

The same as Exercise 154 except that two notes are played with one bow length. Use exactly half of the bow for each note, stopping the bow for the rest, then proceeding in the same direction for the second note. The notes and rests should receive the same time value.

§239. Exercises 169 and 153 Combined

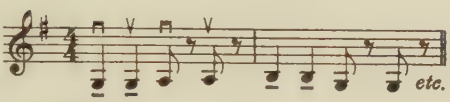
Exercise 170

Exercise 171



§240. Two Legato and Two Staccato Strokes

Exercise 172 (*a*) Pt., (*b*) M., (*c*) Fr.



The legato strokes are played as described in §233 and the staccato strokes in §232. This exercise should be practised at the point, middle and frog of the bow, using about one-third of the bow for each legato stroke and about four inches for each staccato stroke.

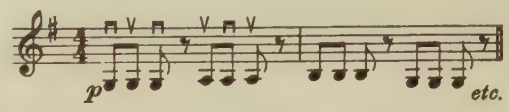
§241. Four Legato and Two Staccato Strokes

Exercise 173 (*a*) Pt., (*b*) Fr., (*c*) M.

This exercise should be played at the point, frog and middle. When practising at the point or middle about five inches of the bow should be used for each stroke and the bow should be stopped by pressing with the index finger at the end of each staccato tone (see §232). When playing at the frog the arm should be held high enough so that the bow may be swung from wrist and made to strike the string and bounce off for each stroke. This is one of the most common orchestra bowings, called the "hammered stroke," and should be mastered early by every player. Bass players do much the same as the others except that they must use more force in attacking the tones or the string will not be set into vibration instantly. Playing very near the frog with the bow lifted after each stroke is less tiring to the bass player than drawing the bow full length for it is not necessary to press the bow when it is lifted and struck at the frog.

§242. Bowing at the Frog

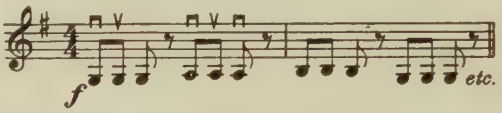
Exercise 174 (*a*) Pt., (*b*) M., (*c*) Fr.



The object of the exercise is to train players in using the wrist- and finger-stroke at the frog, although it may be advantageously practised at the point and in the middle. When playing this stroke at the frog the bow is not lifted from the strings as in the case of most bowings near the frog.

§243. The Hammered Stroke

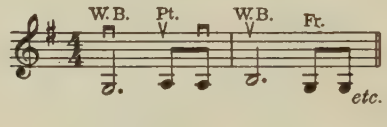
Exercise 175



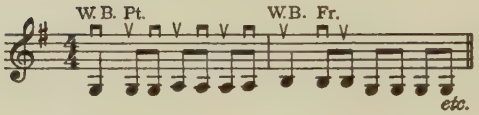
Played as described in §241.

§244. Alternate Long and Short Bows

Exercise 176



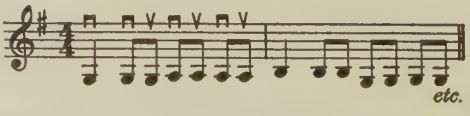
Exercise 177



Use whole bow on the dotted half- and quarter-notes, playing the eighth-notes legato at the point and frog alternately with a light, loose wrist- and finger-stroke.

§245. The Preceding, with Hammered Stroke

Exercise 178 Fr.



Similar to Exercise 177 but played at the frog with the hammered stroke described in §241. Lift the bow after the quarter-notes.

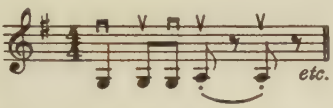
§246. Loose Wrist and Finger Stroke

Exercise 179 (*a*) Pt., (*b*) M., (*c*) Fr.

This should be played at a rapid tempo, the bow held loosely. When playing at the frog the bow is not lifted and violin, viola and cello players use the little finger to lessen the weight of the bow on the strings.

§247. Bowing and Accents

Exercise 180 (*a*) Pt., (*b*) M., (*c*) Fr.



This is a common figure in orchestra music, the two last notes being played up-bow to bring the accented first tone of the next measure down-bow. Since the down-bow is naturally stronger than the up-bow it is better to play all natural accents with the former, even if it is necessary to play two staccato notes on one bow to get the bow in position for the accent. The bow is stopped with pressure after each staccato eighth-note when playing near the point. When playing near the frog the bow is lifted between these notes. This exercise should be practised at the point, middle and frog.

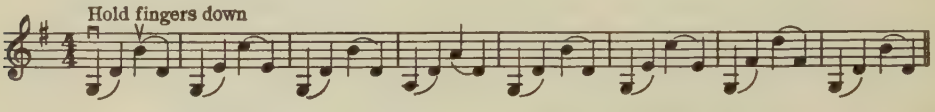
CHAPTER XXVII

§248. Crossing the Strings

THE entire chapter is devoted to this subject. Exercise 181 is the model, followed by thirty different ways of playing it, exemplified in Exercises 182 to 211.

These exercises may be practised *pizzicato* for accuracy and sureness of attack by the entire string section in unison.

Exercise 181 U. H.

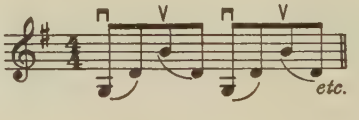


This should be played slowly at first, using the upper half of the bow until the players can play it in tune from memory, then other bowings may be studied. The fingers should be held in place until it becomes necessary to move them. This is a rule that should be followed at all times by all string players if they wish to play in tune.

Bass players play the same notes in reverse order, moving the forearm in crossing the strings while the other instruments move only the wrist.

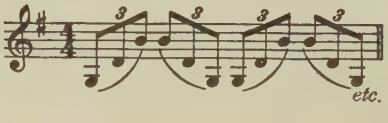
§249. Variants in Eighths, Sixteenths and Triplets

Exercise 182 (*a*) Pt., (*b*) Fr.



Exercise 183 (*a*) Pt., (*b*) Fr.

Exercise 184 (*a*) Pt., (*b*) M., (*c*) Fr.



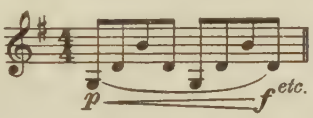
By placing the fingers at the beginning of each measure as in Exercise 181 these exercises may be played in various ways without encountering difficulties; for example each measure may be repeated a number of times before taking the next.

Violin and viola players should practise with a book under the arm if they move their arms in crossing the strings. When using these exercises for tryouts have the violin and viola players stand so that the members of the orchestra can see and decide which players have succeeded best in making their wrists flexible.

Practise 182 and 183 at the point and frog, and 184 at point, middle and frog. Playing these exercises at the frog will be found very difficult. The violin, viola and cello players must counterbalance the weight of the bow by pressing the little finger against the stick. The fingers must function perfectly in guiding the bow across the strings, while the elbow should not move in the slightest degree. These exercises will develop an excellent control of the bow when practised at the frog.

§250. Saving Bow while Crossing Strings

Exercise 185 W. B.

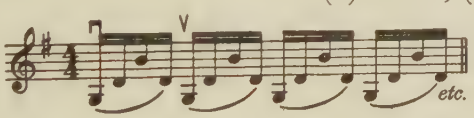


Exercise 186 W. B.

Players should start each measure softly and increase the power to the end of the measure, saving half of the bow for the last count in each measure.

§251. Four Notes to Each Bow

Exercise 187 (*a*) U. H., (*b*) L. H., (*c*) W. B.



This bowing requires a very loose wrist and perfect finger control when practised near the frog.

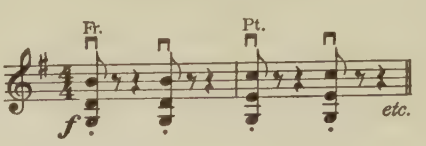
§252. Staccato Chords

(Ex. 188)

Playing staccato chords requires much practice to enable the player to sound three strings simultaneously and give the "biting" effect needed. The players should place the bow on the strings one-half inch from the frog, press until the hair touches the three strings to be sounded, then

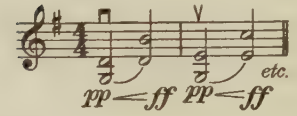
relax the pressure just as the bow starts to move. Very little bow should be used in playing these chords and the bow should be half drawn and partly lifted from the strings with a pull of the wrist and fingers. The bow should be replaced silently for the next chord. It is difficult to replace the bow without producing a grating sound.

Exercise 188



§253. Double Notes

Exercise 189 W. B.



Playing double notes requires greater steadiness of bow than any other style. The bow must be drawn so that an equal amount of pressure is maintained on both strings at all times. Players seldom notice whether one string is receiving more pressure than the other, so long as both strings are sounding. They merely press down harder and draw the bow faster. Starting *pianissimo* and increasing the volume will help to correct this fault. This exercise should be practised very slowly, until the players can sustain each measure for one minute with one stroke of the bow. In order to maintain an equal pressure as the bow is drawn the fingers must constantly regulate the pressure. For example, when starting down-bow at the frog *pianissimo* the little finger must carry the weight of the bow, then as the bow is drawn outward, *crescendo*, the little finger gradually relaxes this pressure and the index finger begins to press as the bow reaches the middle, this pressure increasing to the point. To do this slowly requires constant adjustment, on both the up and down bow. This is an excellent exercise for developing tone power.

Basses differ from the above in that they do not use the little finger in balancing the bow. Playing on two strings at once by the basses is very difficult and is seldom done but practising this exercise will add greatly to the tone power of the basses.

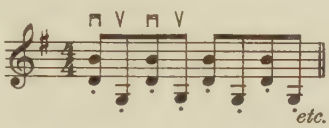
§254. Developing Power

Exercise 190 W. B.

The object of this exercise is to develop tone power. There are two ways to play loudly on a stringed instrument: one is to press the bow and the other is to use more bow. A judicious combination of both will produce the best result. This exercise should be practised with sweeping strokes of the whole bow. In order to keep the bow from bouncing when starting down-bow at the frog it is necessary to use very little pressure at the start of the tone, then pressure may be added as the bow approaches the point. The difficulty in this exercise is in adjusting the pressure of the bow at a fairly rapid tempo. It should be played legato and staccato, using whole-bow for each style. When playing staccato no pressure should be used while the bow is moving, the pressure being exerted during the rests only.

§255. Double Notes, Light Staccato

Exercise 191 Fr.



This style of bowing is executed by the forearm and wrist, the bow being lifted between tones and allowed to fall again in the same place for the next tone. Players should use very little bow (about two inches) for this exercise. Play very near the frog.

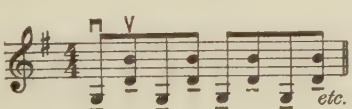
§256. Double Notes, Slurred

Exercise 192 (*a*) Pt., (*b*) Fr., (*c*) M.

Practise this exercise at the point, middle and frog. Players should avoid sounding the D string in getting the bow back to the G string between slurs. This exercise requires a loose wrist.

§257. Legato Stroke at Point and Frog

Exercise 193 (*a*) Pt., (*b*) Fr.



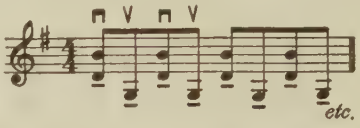
Both styles are somewhat awkward of performance at first, especially when playing at the frog, where finger action is brought into play.

§258. Accented Triplets

Exercise 194 Fr.

The same as Exercise 191 but in a different rhythm. Players should accent the first note of each triplet very strongly.

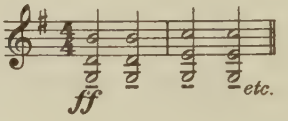
Exercise 195 (*a*) Pt., (*b*) Fr., (*c*) M.



Similar to the preceding, with different accent and bowing reversed.

§259. Sustained Chords

Exercise 196 W. B.



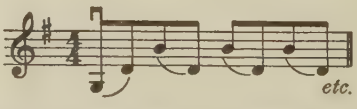
This bowing is similar to that in Exercise 188 except that the chord is sustained. All three strings can be sustained providing sufficient pressure is maintained and the bow is drawn with enough speed. Do not expect much but grunts from the basses on this exercise as it is very difficult for them. However, practising it will increase the tone of the bass section greatly.

§260. Various Combinations of Slurred and Detached Notes

Exercise 197 (*a*) Pt., (*b*) M., (*c*) Fr.

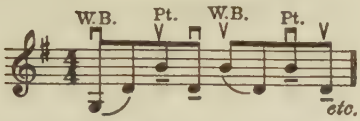
The order of the notes is changed in this exercise, which changes the motions of the bow considerably. It should be practised legato at the point, middle and frog.

Exercise 198 (*a*) U. H., (*b*) L. H.



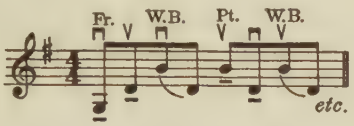
This exercise should be practised by first using the upper half of the bow, then the lower half. It should also be practised starting up-bow.

Exercise 199



Have the players use the whole bow on the two slurred notes, playing the two detached notes at the point or frog as the case may be.

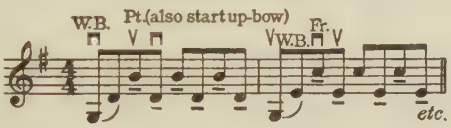
Exercise 200



Exercise 201

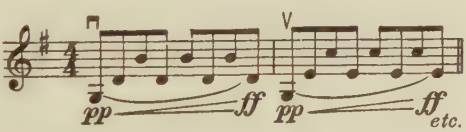
Players should use whole bow for the slurred groups, playing the detached notes at the point or frog. The bow should move with regular undulations.

Exercise 202



Players should use whole bow on the slurred notes, playing the detached notes at the point or frog. They should practise starting this exercise up-bow also.

Exercise 203 W. B.



Players should save the bow at the beginning of each stroke. The undulations of the bow must be widened near the point and narrowed near the frog. The wrist should be moved as little as possible in crossing the strings, to avoid lost motion.

Exercise 204 (*a*) Pt., (*b*) M., (*c*) Fr.

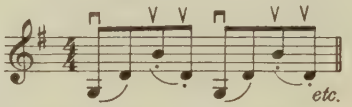
Two slurred notes and one detached note. This is a comparatively simple bowing when played at the point or middle but becomes difficult

when played at the frog. Players should also practise starting the exercise up-bow. The detached notes must receive as much bow as the two slurred notes.

Exercise 205 (*a*) Pt., (*b*) M., (*c*) Fr.

The same as Exercise 204, reversed. The first tone in each group of three should be accented. Start this exercise up-bow also for practice.

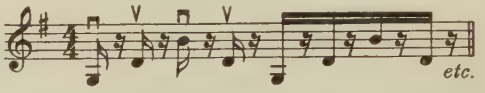
Exercise 206 (*a*) U. H., (*b*) L. H.



The same bowing as Exercise 40, with different notes and on three strings. When playing near the frog the bow should be lifted after each tone played with the up-bow.

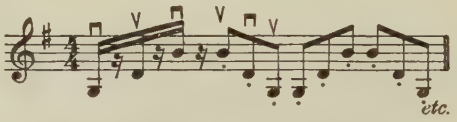
§261. The Detached Stroke of the Forearm

Exercise 207 L. H.



This exercise should be played in the above style, in which the bow is held rigidly and the stroke executed by the forearm with stiff wrist, the bow striking the string at a point midway between the middle and the frog. The stroke is started before the bow strikes the string and the effect is that of the bow being thrown against the string. This is the only bowing used in orchestral playing which is done with a stiff wrist.

Exercise 208



The same as Exercise 207 but in different rhythm. The first tone of each triplet should be accented.

Exercise 209 (*a*) Pt., (*b*) Fr.

This exercise is played like Exercise 206 but in different rhythm, the first tone of each triplet being heavily accented. When played at the frog the first tone should be legato; the second tone started without stopping or lifting the bow; and the bow lifted between the second and third notes of the group but not after the third.

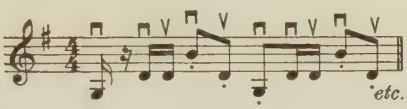
§262. Increase of Dynamics

Exercise 210 (*a*) U. H., (*b*) L. H., (*c*) W. B.

Each measure should start *pianissimo* and end *fortissimo*, the players using very little bow when playing softly and increasing the amount of bow as the increase in power is desired. When played with the lower half of the bow this is an excellent exercise in adjusting the fingers to the proper balance of bow as the strokes increase in length.

§263. Lifting the Bow

Exercise 211 Fr.

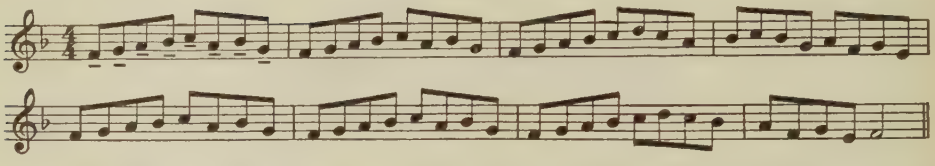


This is an exercise in lifting the bow. It should be practised at the frog, using less than an inch of bow to each stroke. This bowing is quite common in orchestra music.

CHAPTER XXVIII

§264. Separate Bow Legato

Exercise 212 (*a*) Pt., (*b*) M., (*c*) Fr.



This exercise is the model used in practising the remaining bowing exercises in this chapter, Nos. 213 to 239. It should be practised legato at the point, middle and frog until memorized, before the other bowings are taken up. Play with relaxed wrist.

§265. The Bouncing Bow

Exercise 213 (*a*) Pt., (*b*) Fr., (*c*) M.

This exercise should first be practised at the point and frog, then in the middle. The object of the exercise is to teach the bouncing bow style, and the way to learn this style of bowing is to practise at a point on the bow just below the middle and *try to keep the bow from bouncing.* The pressure used in the effort will usually cause it to bounce correctly. Then all that is needed to perfect the bowing is for the players to lower their wrists until the stick is directly above the hair of the bow instead of a little to the side opposite the player as is usually the case when playing at the middle of the bow. If the stick is tilted to one side the bow will bounce sidewise and the effect will be somewhat clumsy.

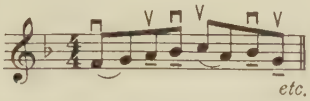
Exercise 214 M.

Another bouncing bow exercise, played like the preceding, but in different rhythm and with pronounced accents.

Exercise 215 Just below M.

§266. Combinations of Slurred and Legato Notes

Exercise 216 (*a*) Pt., (*b*) M., (*c*) Fr.

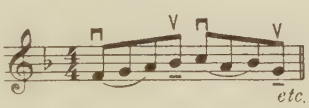


The same as Exercise 199, with different notes. This exercise should be practised at the point, middle and frog.

Exercise 217 (*a*) Pt., (*b*) M., (*c*) Fr.

The same bowing as in Exercise 200, with different notes. This exercise should be played at the point, middle and frog of the bow, and also using whole bow on the slurred groups and playing the detached notes at the point or frog.

Exercise 218 (*a*) L. H., (*b*) U. H.



This is also a bow-saving exercise. The same amount of bow must be used for the single detached note as for the three slurred notes. It should be played with the lower half, then with the upper half of the bow. The single detached note should not be accented.

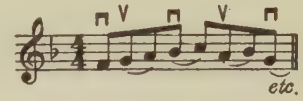
Exercise 219 (*a*) U. H., (*b*) L. H.

Another bow-saving exercise, to be played with an equal amount of bow for the slurred groups and the detached notes.

Exercise 220 U. H.

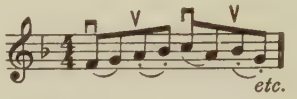
Bow-saving exercise, similar to Exercise 218.

Exercise 221 (*a*) U. H., (*b*) M., (*c*) L. H.



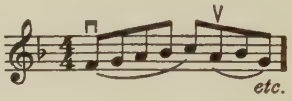
This exercise should be played legato and special attention given to making all the tones of equal length and power.

Exercise 222 (*a*) Pt., (*b*) M., (*c*) Fr.



This exercise is played like Exercises 40 and 206, and should be practised at the point, middle and frog. The bow should be lifted after each note played by the up-bow when playing at the frog.

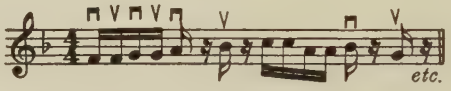
Exercise 223 (*a*) U. H., (*b*) L. H., (*c*) W. B.



Bow-saving exercise, similar to Exercises 155 and 220.

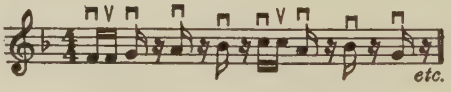
§267. Lifting the Bow

Exercise 224 Fr.



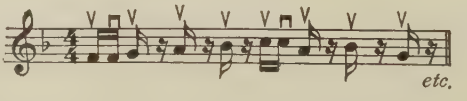
The first five notes should be played at the frog without lifting the bow from the strings. The bow should be lifted after the fifth note and the sixth note played as described for "hammered stroke" in §241.

Exercise 225 Fr.



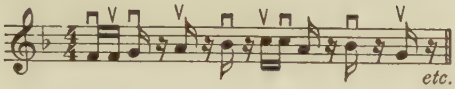
Wrist- and finger-stroke exercise, to be practised at the frog. The bow is lifted after each note that is followed by a rest (see Chapter XXVI, §236 for directions for executing this stroke).

Exercise 226



The same as Exercise 224, but with opposite bowing. Play at the frog.

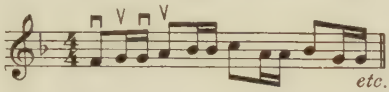
Exercise 227 Fr.



Another exercise in the hammered stroke.

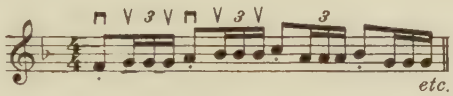
§268. Alternate Bows on Short Notes

Exercise 228 (*a*) Pt., (*b*) M., (*c*) Fr., (*d*) U. H., (*e*) L. H.



The same figure as in Exercise 47 but with different notes.

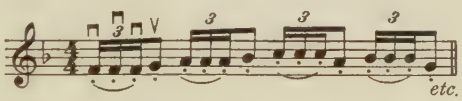
Exercise 229 (*a*) Pt., (*b*) Fr., (*c*) M.



The eighth-notes should be accented and played staccato and the sixteenths legato except when practising at the middle of the bow, in which case the bow should be allowed to bounce.

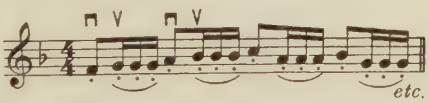
§269. The Thrown Staccato

Exercise 230 Pt.



The bow is lifted and dropped on the string while in motion. Pressure is applied as the bow strikes the string, causing it to rebound several times. With practice, the number of rebounds can be limited to the number desired. This bowing is always played near the point as the bow will not rebound at any other place; the more rapid the tempo the nearer the point it must be played. This exercise should be practised starting up-bow as well as down-bow, although this style of bowing is usually played down-bow.

Exercise 231 Pt.

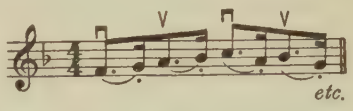


§270. Miscellaneous Applications of the Preceding Styles

Exercise 232 (*a*) M., (*b*) Fr.

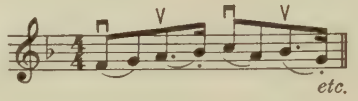
A combination of bouncing bow and hammered stroke styles. The bow should be lifted at each rest.

Exercise 233 Pt.



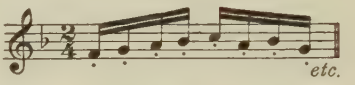
The same bowing as in Exercise 35, with different notes. This is a very common bowing in orchestra music and is usually played poorly by amateur players.

Exercise 234 Pt.



This exercise is similar to 41. The third and fourth notes should be played like Exercise 233.

Exercise 235 M.



Bouncing bow exercise with a different note for each stroke. The placing of the fingers of the left hand must coincide exactly with the strokes of the bow, the fingers being placed a fraction of a second before the bow strikes or two tones will sound for each stroke.

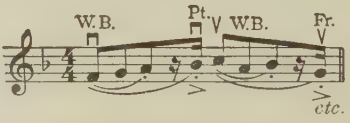
Exercise 236 W. B.

Bow saving exercise. The whole bow must be used on the last eighth-note to bring the bow back into position for the next group of slurred notes.

Exercise 237 U. H.

The bow is stopped after the third note in each slurred group, making that tone staccato while all the others are legato. It should be played with the upper half of the bow.

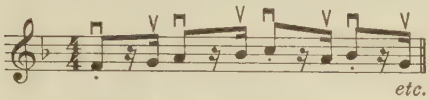
Exercise 238 (*a*) W. B., (*b*) U. H.



Similar to the preceding, except that the last note in each group of four is a sixteenth instead of an eighth-note. It should be played whole bow and with the upper half of the bow.

Exercise 239

(*a*) Pt., (*b*) M., (*c*) Fr.



The same as Exercise 233 but detached. It should be practised at the point, middle and frog. The same amount of bow must be used for the sixteenth notes as for the eighths.

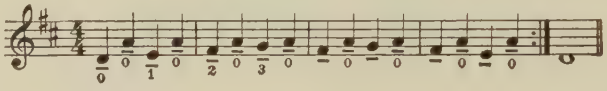
CHAPTER XXIX

§271. Application of Bowings to Adjacent Strings

THE bowings described in the preceding chapters are here applied to adjacent strings. The exercises are similar in many ways to former ones, but new problems arise when each successive tone is played on a different string.

Exercise 240 is the model to which Exercises 241 to 264 are applied. Violin and viola players must use the open A string, not the fourth finger on the D string.

Exercise 240 (*a*) W. B., (*b*) U. H., (*c*) L. H.



Exercise 241 (*a*) Pt., (*b*) Fr., (*c*) M.

Same bowing as in Exercise 212.

Exercise 242 (*a*) Pt., (*b*) Fr., (*c*) M.

Same as preceding but starting on up-bow.

Exercise 243 (*a*) Pt., (*b*) Fr.

Same bowing as in Exercise 159; tempo faster.

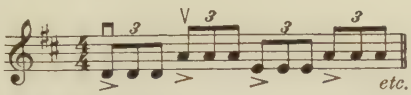
Exercise 244 (*a*) U. H., (*b*) Pt., (*c*) L. H., (*d*) Fr., (*e*) M.

Same bowing as in Exercise 34.

Exercise 245 (*a*) M., (*b*) Pt., (*c*) Fr.

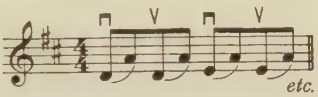
Same bowing as in Exercise 213.

Exercise 246 (*a*) M., (*b*) Pt., (*c*) Fr.



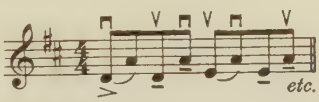
Same bowing as in Exercise 214.

Exercise 247 (*a*) U. H., (*b*) L. H., (*c*) M.



Same bowing as in Exercise 198.

Exercise 248 (*a*) U. H., (*b*) L. H.

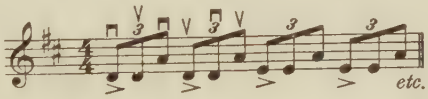


Same bowing as in Exercise 199.

Exercise 249 (*a*) U. H., (*b*) L. H.

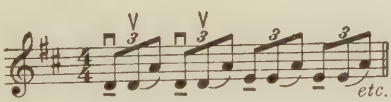
Same bowing as in Exercise 200.

Exercise 250 (*a*) Pt., (*b*) Fr., (*c*) M., (*d*) U. H.



Same bowing as in Exercise 244. Players will find it difficult to accent the first note of each triplet as the tendency will be to play the single tone on the A string stronger than those on the D string.

Exercise 251 (*a*) U. H., (*b*) L. H.

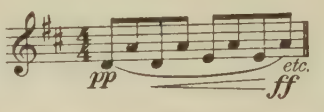


Same bowing as in Exercise 205.

Exercise 252 (*a*) W. B., (*b*) U. H., (*c*) L. H.

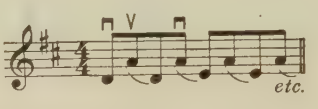
The undulating bowing used in Exercise 203.

Exercise 253 W. B.



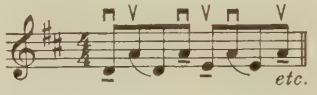
Same as the preceding, but eight notes to a bow. Save the bow at the beginning of each measure.

Exercise 254 (*a*) Pt., (*b*) M., (*c*) Fr.



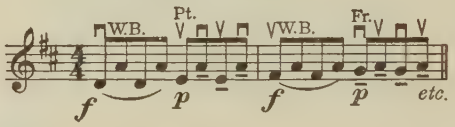
Same bowing as in Exercise 221.

Exercise 255 (*a*) Pt., (*b*) Fr., (*c*) M.



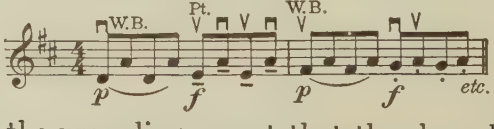
Same bowing as in Exercise 219.

Exercise 256



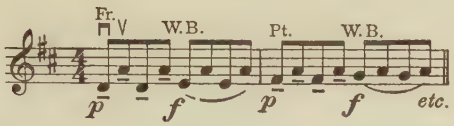
Four tones slurred, *forte*, followed by four detached tones, *piano*. Players should use whole bow on the slurred groups, playing the detached notes at the point and frog, alternately.

Exercise 257



The same as the preceding except that the slurred notes are played *piano* while the detached notes are played *forte*. The detached notes should be played legato when played at the point and staccato with the bow lifted after each when played at the frog.

Exercise 258

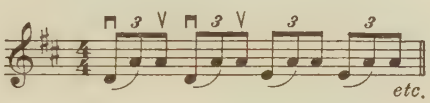


The reverse of Exercise 256. The detached notes are played legato, both at the point and at the frog.

Exercise 259

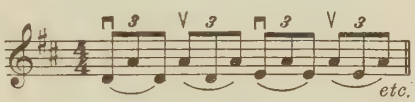
Same as the preceding except that the detached notes are played staccato.

Exercise 260 (*a*) Pt., (*b*) Fr.



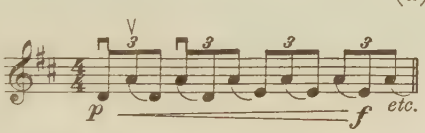
Same bowing as in Exercise 204.

Exercise 261 (*a*) U. H., (*b*) L. H.



Three notes to a bow. This bowing is similar to that of Exercise 248 in that the wrist motion is the same (undulating), the difference being in the rhythm and accent. As with most bowings it is much easier to play near the point than near the frog.

Exercise 262 (*a*) Pt., (*b*) Fr., (*c*) M.



Two notes to a bow and three notes to a beat, a syncopation in effect. The first note of each triplet should be accented. Each measure should begin *piano* and swell to *forte*.

Exercise 263 (*a*) Pt., (*b*) Fr., (*c*) M.

This is an exercise for relaxing the wrist muscles (see Chapter XXVI, §223 for directions). When playing this exercise at the middle, the bow can be made to bounce if the first tone in each group is accented by pressing the bow with the index finger.

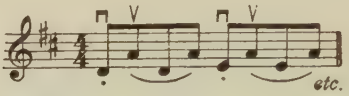
Exercise 264 W. B.

Same as Exercise 253 but twice as fast.

Exercise 265 U. H.

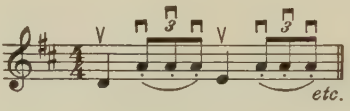
Same bowing as in Exercise 218.

Exercise 266 U. H.



The preceding, reversed.

Exercise 267 Pt.



Similar to Exercise 231, but starting up-bow.

Exercise 268 Pt.

Same bowing as in Exercise 231.

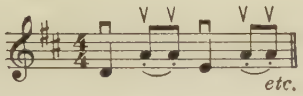
Exercise 269 Pt.

Similar to Exercise 231, with four notes instead of three in the thrown stroke.

Exercise 270 Pt.

Same as the preceding, starting down-bow.

Exercise 271 U. H.

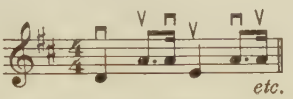


Same bowing as in Exercise 222.

Exercise 272 U. H.

Same bowings as in Exercise 234.

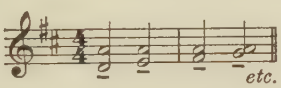
Exercise 273 (*a*) Pt., (*b*) Fr., (*c*) M.



The detached staccato bowing. This bowing should sound exactly like the preceding but is played with separate strokes at the point and frog (see Chapter XXVI, §241 for directions).

§272. Double Notes

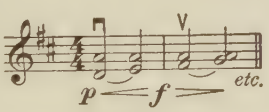
Exercise 274 W. B.



It is necessary that the fingers be placed vertically on the strings in playing this exercise, though this does not apply to the bass players, whose A string lies to the right of the D string. Players who have a habit of allowing their fingers to lie flat on the strings when playing will soon be cured of this bad habit if given a dose of Exercises 274 to 281.

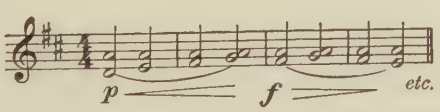
Bass players always flatten their fingers on the strings; violin, viola and cello players never should.

Exercise 275 W. B.



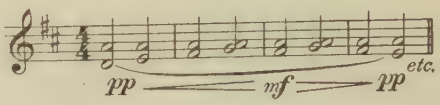
The same as the preceding with two notes to a bow. Players must save bow at the beginning of the tone (see Exercise 189).

Exercise 276 W. B.



Compare Exercises 189, 274, 275.

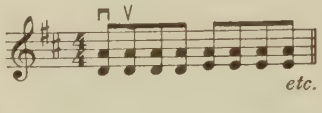
Exercise 277 W. B.



Similar to Exercise 276; four measures to a bow.

Exercise 278 (*a*) U. H., (*b*) L. H., (*c*) W. B.

Exercise 279 (*a*) U. H., (*b*) Pt., (*c*) Fr.



Exercise 280 (*a*) Fr., (*b*) U. H.

This exercise should be practised with the wrist- and finger-stroke described in Chapter XXVI, §242, and with the thrown-bow stroke described in Chapter XXVIII, §269.

Exercise 281 (*a*) Fr., (*b*) M., (*c*) Pt.

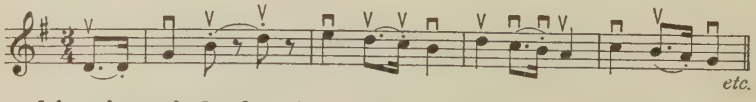
This exercise should be played legato at the point and frog and with bouncing bow at the middle of the bow (Chapter XXVIII, §265).

§273. Miscellaneous Bowings

Exercise 282 U. H.

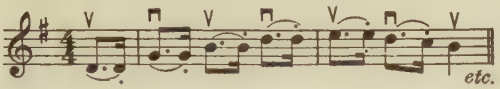
This exercise is to be used in practising the succeeding ones, Nos. 283 to 293. It should first be learned by practising legato with the upper half of the bow, using the same amount of bow for the quarter- and eighth-notes.

Exercise 283 U. H.



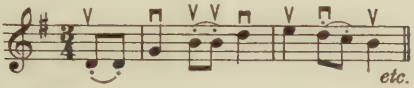
A combination of the bowings used in Exercises 233 and 206.

Exercise 284



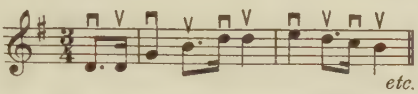
Same bowing as in Exercise 233.

Exercise 285 U. H.



This bowing is similar to that used in Exercises 271 and 206, except that the two staccato notes on one bow occur down-bow here as well as up-bow. To execute this stroke effectively on the down-bow the stick should be tilted toward the bridge by lowering the wrist.

Exercise 286 (*a*) U. H., (*b*) Fr., (*c*) M.

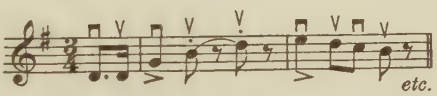


Another application of the bowing used in Exercise 239.

Exercise 287

A combination of the bowings used in Exercises 234 and 207.

Exercise 288 U. H.



This is an example of how fine players manipulate the bow so the first tone in the next measure (primary accent) will occur on the down-bow.

Exercise 289 Fr.

The detached stroke. Compare Exercise 207.

Exercise 290 Fr.

A common stroke in orchestra music. The bow should be lifted between the staccato eighth-notes while the sixteenth-notes should be played legato with short strokes at the frog, accenting the first sixteenth in each group heavily.

Exercise 291 (*a*) Pt., (*b*) U. H., (*c*) Fr., (*d*) M.

Similar to Exercise 221 but with different note values.

Exercise 292 (*a*) Pt., (*b*) Fr., (*c*) M.

This exercise should be played in three ways: (1) at the point, legato, using very little bow; (2) at the frog, legato, with the wrist- and finger-stroke used in Exercise 175; and (3) at the middle, bouncing bow, as in Exercise 213. The *forte-piano* is produced by stopping the bow and pressing it against the strings, then relaxing the pressure just *after* the bow starts to move. The *forte-piano* tone should receive about twice as much bow as the others, except the note preceding, which must receive the same amount as the bow is preparing to attack the accented note. In making the *crescendo* the players should use more bow and more pressure and in the *decrescendo*, the reverse.

§274. The Tremolo

Exercise 293

This exercise in tremolo should receive the serious attention of all orchestra students. The tremolo is seldom played well by an amateur orchestra because the players do not use the correct part of the bow at which the effect is most easily executed. It is almost impossible to keep the bow from bouncing when playing tremolo at the middle, so that part of the bow should be avoided as much as possible. It is almost equally difficult to play tremolo *pianissimo* near the frog or *fortissimo* near the point, the reverse being the easiest and most effective way.

CHAPTER XXX

§275. Shifting Positions; the Third Position

THIS is perhaps the least understood phase of stringed instrument technique. A careful study of Exercises 294 to 307 will solve the problem for any violinist.

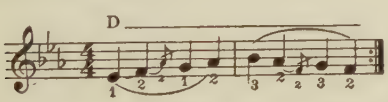
Inasmuch as all points of the fingerboard feel alike to the touch, there must be some definite guide by which the player may know how far to slide his hand to get into the desired position. This guide is a glissando made by sliding one finger—the last one used before shifting—to its proper place in the new position, so cleverly hidden or covered by the player that it is unnoticed by the listener. If a shift occurs between two strokes of the bow the glissando is made just *before* the bow changes directions and *not after*, as is often done by amateurs, producing a scooping sound so suggestive of rough weather at sea—and its result. The easiest and most common shift is between the first and third positions. The violin or viola player may have a definite guide in placing his hand in the third position by learning the exact angle at which he may hold his wrist so that, when his wrist touches the body of the instrument, he may place his fingers accurately in the third position. (A player's hand is in the third position when his first finger is in the place taken by his third finger when playing in the first position.)

Exercise 294

This exercise should be practised on all the strings, for the position of the fingers varies on the different strings. The correct position for holding the instrument is absolutely necessary in shifting positions.

The exercises in this chapter may be practised *pizzicato* by the entire string section for testing progress in accurate shifting.

Exercise 295 (*a*) (*b*)



Exercise 295 (*a*) shows the way in which (*b*) shall be played, the grace notes being added by the player and played so lightly that they are not noticed by the listener. The player must develop a very quick ear in order that he may use this definite guide without exposing his secret to the listener. This is the only way he can learn to play in tune

in the upper positions. When he is able to play Exercise 294 in perfect tune he should practise Exercise 295, allowing the grace notes to sound less and less until they are inaudible to any but himself.

§276. Shifting with the Third and Fourth Fingers

Exercise 296

While the first and second fingers are more commonly used for shifting, the third and fourth fingers are sometimes used. This exercise brings them all into play.

§277. The Fifth Position; Shifting with First Finger

Exercise 297

The first finger is slid from *do* (tonic) to *sol* (dominant) and held in place while the fourth finger is placed for high *do*. The first finger is removed just before the fourth finger begins to slide to *la*. The hand is in the fifth position when the fingering used is the same as when played on the next higher string. With cello and bass players the same principle holds true, but different fingers are used.

After this exercise has been mastered players should practise it without sounding the quarter-notes audibly. The position of the left hand should be the same in all positions.

Exercise 298 (Violin, viola, cello)

This exercise shows how to play a scale on one string. The small notes should be sounded at first then gradually eliminated until only the player hears them.

Bass players seldom play in the higher positions except on the G string.

§278. Shifting with Third Finger

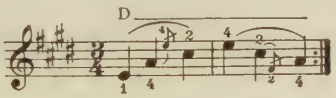
Exercise 299 (Violin, viola)

Shifting with the third finger. The third finger plays *mi* (mediant), then slides to *ti* (leading-tone), which brings the first finger into position for *sol* (dominant). The first finger is placed before the third finger is removed. If the third finger slides too high the first finger will be sharp and vice versa. The player must hear and stop the third finger at the right point, place the first finger and remove the third so suddenly that the listener would not know that he sounded *ti* at all. The downward slide by the first finger from *sol* to *do* is done the same way, as are all other shifts.

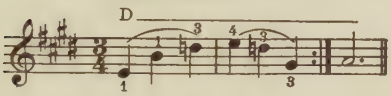
Cello and bass players use different fingers; otherwise the above directions apply.

§279. Shifting with Other Fingers

Exercise 300 (Violin, viola)



Exercise 301



When players have mastered the preceding shifting exercises they will have little difficulty with these. Exercise 300 is for shifting with the fourth and second fingers; 301 for shifting with the first and third fingers.

Exercise 302

Exercise 303

Exercise 304

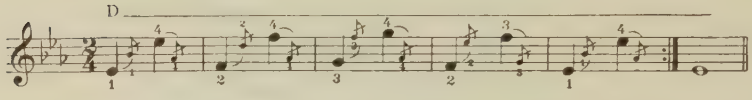
Exercises 302 and 303 represent the two stages in learning to shift correctly in the last. In Exercise 302 all the notes are sounded, giving the player a chance to check up on his shifts and intonation. In 303 one note is left out of each measure and a grace-note substituted. In 304 the melody is written as it should sound, without the grace-notes, which are included to show the student where and how to shift. These exercises should be practised until the players can play Exercise 304 in perfect tune without sounding the grace-notes audibly.

Exercise 305 (Violin, viola)

This exercise contains shifts which often occur in orchestra music. It should be practised on each string.

§280. Shifting on Detached Notes

Exercise 306



The shift is made before the bow changes direction, as the grace-notes indicate. The latter should be sounded clearly at first, then gradually shortened until they are heard only by the player.

§281. Major and Minor Scales and Arpeggios

Inasmuch as the scales are played with the same fingering on the different strings it is only necessary to give here all of those starting on the G string, and the player may practise them on the other strings, since the purpose of this book is not to teach players to read music, that part of their education being provided in the orchestra or band. These scales and arpeggios should be practised using both the fingerings given. The fingering above the notes is that used when playing in the first position and that below the notes used in playing the scales and arpeggios on one string, employing the various positions as needed. The value of these scales and arpeggios lies in their judicious use. The leader should not assign them until the players see the need for them. When they evidence difficulty in playing in a certain key they may be asked to practise the scale and arpeggio in that key, but no scale or exercise should be assigned merely for the sake of learning it, *per se*.

It is not necessary for the bass players to practise these scales on one string as they would never use this technique in orchestra music.

The fingering below the notes is for playing the exercise on one string only. The chromatic scale is played the same, wherever it may start and end, the first and second fingers each play two tones and the third and fourth, one tone.

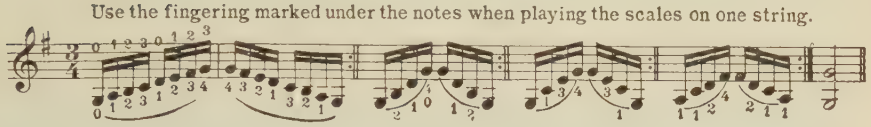
Various ways to play these scales for finger dexterity and accuracy are given in Exercises 321, 322, 323.

Exercises 307 to 320 (Violin, viola, cello)

Major Scales and Arpeggios

Use the fingering marked under the notes when playing the scales on one string.

307



308

309

310

311

312

313

Minor Scales and Arpeggios

314

sul G

315

sul D

316

317

318

319

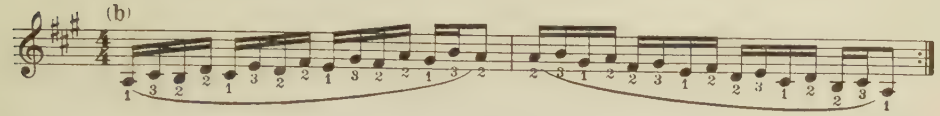
320

Transpose Nos. 307 to 320 to other strings.

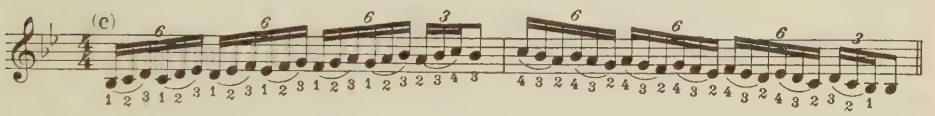
Exercises 321, 322, 323

Play above scales in the following ways:

321

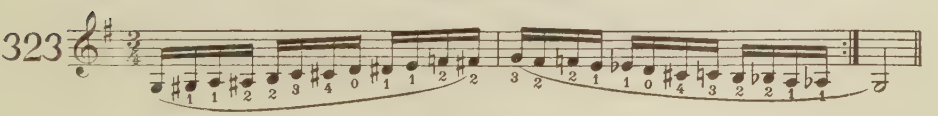


322



Chromatic Scale

323



For home practice advanced players should play the above scales and arpeggios and the variations, through two octaves.

CHAPTER XXXI

§282. Instructions for the Use of Exercises in Section IV of the Students' Books

THE study material of this chapter appears only in the students' books to be used in connection with this volume, as considerations of space preclude its appearance here. The teacher must therefore familiarize himself with it by examining the contents of the students' books, in order to get the best results.

This material consists of exercises for the individual instruments, illustrating the technical problems peculiar to each—its idiom, in short—and in its totality covering practically every phase of ensemble playing. The exercises are numbered from 324 on, but they can be played only by the same (or similar) instruments, not by an ensemble, large or small. Exercise 324, for example, may be played by one or more flutes, or by a flute and a piccolo (since these instruments are similar in technique) but not by a flute and clarinet, or by a cornet and violin, or any other such combination of unlike instruments. In other words, there is an exercise numbered 324 in each of the students' books, but it is different for each instrument.

The material is well suited for tryouts. Until the teacher is quite familiar with the nature of the exercises he may permit the players of each section to select the exercise for the weekly tryout if the latter is to be on material from Section IV. A better plan would be to have one tryout a month using something from Exercise 324 on, and the other tryouts on previous material (appearing in the text of this volume) or on parts of the selection being studied.

The daily technical exercise is so labeled in every book of the wind section although the numbers do not coincide. The wind players may be asked to practise "the first five groups of the daily technical exercise," which will send each player home with a similar task to perform, that of mastering difficult fingering combinations. The daily technical exercise is much more vital for the woodwinds than for the brass players because they have many more problems in finger technique. When a band or orchestra is first organized the daily technical exercise may be used as a test to enable the leader to decide where to place the players pending further tryouts. This exercise is sufficiently complicated that it is not likely to be played perfectly by anyone.

The scales and arpeggios through two or more octaves may be used for tryouts between players of like instruments.

The arpeggios applied to the chords in Exercises 1 to 19 offer a wealth of material for practice and tryouts. For the wind players there are nearly one hundred ways suggested for playing the nineteen chord groups, using all the articulations in Exercises 20 to 104. As these arpeggios are not written out the players must extend the chords to suit the range of their instruments and the rhythms used. This is an excellent means for developing musicianship and the players will find the arpeggios highly interesting for practice and tryouts. The strings have a number of arpeggio forms in different rhythms and bowings which may be applied to all the chord groups and which will prove intensely interesting and profitable to the players.

The jazz tricks are included for players who desire to earn money with their music and are not for use in tryouts. These tricks and other hints for dance orchestras are explained in Appendix A.

The percussion players should learn to play all the instruments of that section and should be assigned different instruments for certain pieces so that they will have the experience of playing them in the band or orchestra. In this section all the players may try out on snare drum one week, timpani the next and xylophone the next. In this way one player may become first snare drummer, second xylophone and third timpani of the band or orchestra. Then when a difficult part is encountered for one of the percussion instruments the leader will know immediately which player to assign to the part for public performance.

A general outline is followed with each group or section where the technical problems are similar; the following will serve as a guide to teachers in selecting material for tryouts:

String Section—

(*A*) Finger exercises for developing dexterity and double stops.

(*B*) Scales and arpeggios through two or more octaves with fingerings.

(*C*) Vibrato exercise and directions for practising it.

(*D*) Various forms of arpeggios to be played using the chords in Exercises 1 to 19.

(*E*) Harmonics, natural and artificial, and how to play them. Table of harmonics and the easiest ways to play them.

Woodwind Section—

(*A*) Difficult fingerings, changing registers, cross fingerings, etc.

(*B*) Daily technical exercise, consisting of a short exercise playable with from 80 to 225 different groups of notes covering the entire range of each instrument and embodying practically every combination of fingering possible on each instrument. The players should practise a certain number of these groups of notes each day to develop a fine technique. This is excellent material for tryouts between players of like instruments.

(*C*) Scales and arpeggios through two octaves.

(*D*) Arpeggios applicable to the chords in Exercises 1 to 19, using the rhythms of Exercises 20 to 104. This material is excellent for advanced players in developing technique and musicianship and is playable by the woodwind section in ensemble.
(*E*) Jazz tricks for clarinets and saxophones.
(*F*) How to read the various clefs so the players may play music written for other instruments.

Brass Section—

(*A*) Exercises for the development of embouchure.
(*B*) Exercises in using duplicate fingerings and positions.
(*C*) Exercises in developing lip flexibility.
(*D*) Daily technical exercise similar to same for woodwinds. Players should practise a certain number of the groups of notes each day.
(*E*) Scales and arpeggios through two octaves.
(*F*) Arpeggios to the chords in Exercises 1 to 19 (playable in ensemble for brass section).
(*G*) Jazz tricks for cornet, trombone, alto and baritone.

Percussion Section—

(*A*) Exercises in cross beats and rhythms for timpani.
(*B*) Exercises including all of the common beats for snare drum.
(*C*) Exercises for tambourin, castanets and triangle (Nos. 463 to 468).
(*D*) Hints to the jazz drummer.
(*E*) Daily technical exercise for snare drum, consisting of 37 rhythmic combinations.
(*F*) Daily technical exercise for xylophone or bells, with 38 groups of notes.
(*G*) Daily technical exercise for timpani, containing common beats, cross beats and rhythms.

APPENDIX A

The Dance Orchestra

§1. Doubling. §2. Variety. §3. Jazz Playing. §4. The Successful Jazz Band. §5. Improvising. §6. Jazz Tricks for Clarinet and Saxophone: (*a*) Glissando Downward; (*b*) Glissando Upward; (*c*) The Laugh; (*d*) Flutter-Tongue; (*e*) Slap-Tongue. §7. Mutes for Cornet and Trumpet. §8. The Drums.

The Dance Orchestra

§1. Doubling

The successful dance orchestra is the one which produces the greatest variety of music with the fewest players. That is why one often sees racks holding half a dozen instruments surrounding a player.

The foundation of a good dance orchestra consists of a good pianist and a trap drummer who both know the dance tempos and who can keep a steady rhythm while playing. In addition to these, a dance orchestra requires a violinist who is able to play second violin parts as well as first; a saxophonist who doubles on clarinet, and, if possible, oboe, and who can improvise counter-melodies and arpeggios; a cornetist who knows his tricks; and a trombonist who can "fake." If an orchestra can afford two cornetists or two saxophone players, so much the better. A tuba would be the next acquisition.

The above would be an ideal dance orchestra of nine players. They should practise together and memorize most of their music and the leader should have a set of signals with which to guide his players as to which one should play certain "breaks," etc. If the leader is the violinist, he may tap twice on his stand with his bow to indicate that the orchestra is not to repeat the piece or section. He may tap three times if he wants them to play it over again and he may tap once and point to the player who is to take the "break." This last signal should be given sufficiently in advance to allow the player time to formulate his "trick" before doing it.

§2. Variety

The dance orchestra leader must strive for variety at all times. The monotony of hearing the same piece over and over palls upon the dancers unless a new feature is added each time it is played. He must have new tricks up his sleeve for the end of the evening as well as for the beginning. He would do well to save the best for the last. All the players should be encouraged to learn new tricks to perform, especially when playing the more popular numbers which are repeated so often during an evening. The players may take turns playing the melody as solos or duets, or the orchestra may play very softly while one player plays variations, or the drummer does a set of tricks, then the orchestra may repeat the strain *fortissimo*, etc.

§3. Jazz Playing

The good or evil of jazz playing is not under discussion. The fact is that jazz is with us and many fine musicians earn a good living playing

it. As this book is written to help vocational musical training as well as other instrumental work it would be obviously unfair to withhold information that would help players to earn their living. It is hoped that the use of these so-called "tricks" will not hinder or spoil the fine playing of any student. It need not, and, if properly done, does not. In fact one of the authors has been a member of several first class symphony orchestras and was for two seasons a valued member of one of the most famous jazz orchestras.

Those who think it an easy task to become a fine jazz player should look up the records of those who have become well known in this line. They will find that nearly all of the famous ones are fine musicians who have devoted their lives to music and who are capable of holding good positions in the greatest symphony orchestras. Many of these players have left the symphony orchestras, temporarily, because of attractions in the way of income, but many of them expect to return to symphonic playing eventually. Most "jazz artists" prefer more dignified music. They learn and perform their tricks much as an acrobat does, to earn their living. They never play jazz for their own recreation. One of the authors once knew a famous jazz player who was studying diligently in the hope of being accepted as a member of a symphony orchestra. He was earning twice as much as he could expect to earn as a member of the symphony but was willing to sacrifice part of his income in order to have the joy of playing symphonic literature.

§4. The Successful Jazz Band

The successful jazz band is not a "one-man" show. Each player is given an opportunity to exhibit his wares. The player who wants to do all the "shining" soon becomes unpopular with the other members of the orchestra and with the people who engage the orchestra. If one wants to become a good jazz player, he should learn his "stuff," then use it sparingly and it will be appreciated.

§5. Improvising

Improvising or "faking" consists in making up a counter-melody or playing arpeggios as an accompaniment when another instrument is playing the melody. To do this the player must learn to recognize the chords in Chapter XVIII and be able to play all the arpeggios in Exercises 106 to 130, then use good taste in applying this ability. The time to use arpeggios is while the other members of the orchestra are playing sustained chords. The player's ear will tell him which arpeggio to use and he will play it in the proper rhythm, as in the following example:

mastery of the syncopations in Exercises 98 to 104 will enable the clever player to insert an occasional "break" that will add greatly to his popularity.

No specific directions can be given for improvising counter-melodies. The player must have acute ability to hear the harmony of the piece, then he must be able to invent melodies that fit the harmony. The counter-melodies should differ in rhythm and pitch from the regular melody of the piece, for example, when the main melody is sustained the counter-melody should move rhythmically with several changes in pitch, and vice versa.

§6. Jazz Tricks for Clarinet and Saxophone

(*a*) *Glissando Downward*

This is performed on the saxophone and clarinet by relaxing the lip pressure and lowering the jaw as in saying *ē ā äh ō oo.* On wide skips between notes the player should learn to add the fingers one by one, closing the holes gradually by lowering the fingers slowly as he makes the glissando. By relaxing the lip pressure less and lowering the jaw more, the effect will more nearly match the violin glissando.

(*b*) *Glissando Upward*

This is performed by relaxing the lip pressure and lowering the jaw while removing one finger at a time, opening the holes gradually by raising the fingers very slowly. The jaw should remain low until the fingers are placed for the top tone, then the jaw is raised and the lip pressure increased to bring the tone up to the proper pitch. Players should not attempt this trick until they have acquired a strong embouchure and have learned to play with perfect intonation or they will fall into the habit of playing with relaxed lip pressure and lowered jaw with the resulting "sour" tone.

(*c*) *The Laugh*

This is executed by playing a chromatic scale downward, beginning each tone with a tightened lip pressure and a raised jaw, then releasing both, whispering the syllable *tee-ah* for each tone. The laugh is most easily played in the upper register, from high D to A.

(*d*) *Flutter-Tongue*

This is played by allowing the tongue to flutter or roll as in trilling or pronouncing the letter *R.* Whisper the syllable *tr-r-r-r-r-r-r-r-r-r.*

(*e*) *Slap-Tongue*

Place the mouth-piece farther in the mouth than usual, with the tongue flattened against the reed, lower the jaw suddenly creating a vacuum, then start the tone by suddenly pulling the tongue away from the reed. A thin reed is necessary for this trick.

§7. Mutes for Cornet and Trumpet

There are several varieties of mutes which produce various changes in tone-quality when used with either of these instruments. The player should visit a music store and select two or three which produce different qualities and add them to his equipment, being sure that he selects mutes which do not change the pitch of the instrument and cause him to play out of tune, for playing out of tune in a jazz band is no more to be tolerated than in a symphony orchestra.

Placing the left hand over the bell in varying degrees will also change the quality of tone. The "waw-waw" effect is produced by covering the end of the bell with the hand, then partially removing the hand.

The flutter tongue is made as on the saxophone or clarinet.

Hanging a hat or bucket over the bell, playing into a megaphone, holding a kazoo in the bell and various other tricks are usable occasionally.

§8. The Drums

Every jazz drummer has a whole bag full of tricks and any effort to enumerate them exhaustively would be futile. One bit of advice can be offered, however, and that is that no trick which is apt to disrupt the rhythm of the orchestra is worth trying.

The bass drum should usually keep the rhythm while the player is doing tricks with the wood-blocks, or some trap in syncopation. A fine drum teacher requires all his pupils to learn to beat time with both hands and both feet as follows: beat one with the left foot, two with the right foot, three with the left hand, and four with the right hand, keeping all these beats going at the same time. When a drummer can do this correctly while keeping time to a piece he is qualified to attempt syncopating with his traps.

Hints

The bass drum usually beats every beat in a fox-trot.

Releasing the snares occasionally for part of a piece is effective.

Never play a strain of music twice in exactly the same way. Change something if it is only disconnecting the cymbal.

Too much crash cymbal deafens the dancers.

"Baby cry" and other noisy traps should not be used too often. Once or twice in a piece is more effective than an overdose.

The drummer's job is to keep the time. This must be steady and uninterrupted, no matter what else happens in the orchestra.

APPENDIX B

Repairing Instruments

§1. Possibility of Making Simple Repairs. §2. Stringed Instruments. §3. Re-Gluing. §4. Repairing Cracks. §5. Rib Cracks. §6. Broken Necks. §7. Pegs and Peg Boxes. §8. Fingerboards, Bridges, etc. §9. Precautions. §10. Replacing Broken Bridges. §11. Cleaning Bow Hair. §12. Straightening Crooked Bows. §13. Woodwind and Reed Instruments; Replacing Pads. §14. Adjusting Pads. §15. Adjusting Keys. §16. Selecting Mouthpieces and Reeds. §17. Repairing Cracks. §18. Broken Keys. §19. Cork Joints. §20. Barrel Joints. §21. Brass Instruments; Sticking Valves. §22. Slides. §23. Dents. §24. Water Keys. §25. Percussion Instruments; Re-Lapping Drum Heads. §26. New Heads. §27. Patching Heads. §28. Tuning Bells and Xylophones.

REPAIRING INSTRUMENTS

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§1. The Possibility of Making Simple Repairs

The problem of keeping school-owned instruments in good repair has been a difficult one in localities where an expert repair man is not available. Many musicians do not know that most of the repairs to stringed instruments, and many of those common to woodwind and brass instruments, can be made in an ordinary workshop by anyone with mechanical ability. Many good instruments are laid aside because the music supervisor or the school authorities do not know that they can be satisfactorily repaired in their manual training departments with very little expense. The purpose of this appendix is to outline briefly a number of ways by which simple repairs can be made.

§2. Stringed Instruments

Most stringed instruments come from foreign countries and since the war the wood with which these instruments are made has been of inferior quality and unseasoned. Consequently they are very apt to crack or split under any change of climatic conditions. For this reason it is usually better to purchase used stringed instruments, even if they need repairs, than to invest in these inferior new instruments which need constant attention.

It is quite important for one to realize that while cracks or splits in wooden instruments are impossible to prevent, they do not directly affect the tone as much as would naturally be supposed. Instruments can be used, even while cracked, providing the pressure of the strings does not tend to widen the aperture. Wooden instruments do not crack because of dampness. Instead, all checking and cracking is caused by the moisture leaving the wood suddenly. It is not dangerous to take a bass viol out in the rain. The danger lies in placing it in a very dry room immediately afterward. Steam heat is the greatest enemy to wooden instruments because of this fact.

Manual training departments in many cities have offered their assistance to the music supervisors and together they have worked out many clever ways to repair damaged instruments. Mr. Maddy, while in Richmond, Indiana, once made the statement that you could always find a bass viol or cello in his manual training department for repairs, and that they were sometimes brought to this department in many pieces.

The bass is the most liable of all stringed instruments to crack and split. There are very few old basses in the country that are not full of cracks. The writer examined a violin belonging to one of the first violinists of the Chicago Symphony Orchestra. The top of the instrument had about fifteen different cracks and was so weakened thereby that a finger could be pushed through at almost any point. This violin was valued at fifteen thousand dollars. The important fact to note is that cracks and splits, if properly and correctly mended, do not injure the tone of an instrument.

When gluing any member of the viol family, great care must be taken that the crack, when brought together by the clamps, closes perfectly. Any manual training department can do this work successfully. The best grade of cabinet makers' glue should be used, and very sparingly. All old glue should be removed before new glue is applied. Carpenters' or cabinet makers' clamps of various descriptions are used, although specially made tools are now being sold by leading supply houses which greatly facilitate repair work. As soon as the glue is put in the crack, pressure must be applied to the clamps, closing the aperture. The glue that is squeezed out of the crack must be wiped off with a soft cloth dampened with warm water, being sure that every particle of glue is removed from the outside of the instrument before the glue is allowed to dry or the varnish will peel off where glue is left. It is advisable to pad the clamps so they will not crush or mar the varnish when tightened. The instrument should be left under the pressure of the clamps from one to three days to allow the glue to dry thoroughly.

§3. Re-Gluing

The most common trouble with members of the viol family is that of the side parting from the back or top, and in most cases the repair is effected by the simplest kind of a gluing operation. A very simple clamp may be made for this procedure by boring three-eighth inch holes in the centers of two wooden blocks and fitting with three-eighth inch bolts of proper length to suit the instrument to be repaired, threaded at one end to receive a winged nut. Bolts of different lengths may be used with the same blocks for repairing instruments of different sizes. A half dozen of these clamps should be kept on hand for use in repairing stringed instruments. These clamps may also be purchased.

§4. Repairing Cracks

In most cases splits occurring lengthwise in the back or belly of an instrument can be drawn together under reasonable pressure. If this does not close the opening perfectly the top or back should be unglued from the sides which will usually allow the opening to close very easily. In cases where this will not suffice it may be necessary to resort to an inlaying operation which any manual training instructor or carpenter will understand. A more permanent repair is made by removing the back of the instrument and gluing small pieces of wood, called "buttons"

across the crack on the inside of the instrument. When this is done it is almost necessary to have a "form" to enable the workman to replace the back in the correct position as the sides are apt to bulge.

§5. Rib Cracks

Basses and cellos often split along the sides or ribs and this is more difficult to repair if done as a professional repair man would do it, for he would remove the back and glue buttons on the inside of the instrument, an expensive operation. A more substantial, though less beautiful repair can be made by gluing a strip of veneer on the outside of the instrument, completely and permanently closing the split. If the veneer is quite thin and the workman is clever he may so match the color of the instrument that the repair will not be noticeable to the eye while the tone quality will not suffer in the slightest degree.

§6. Broken Necks

In case the neck of an instrument is broken a very successful repair can be made by gluing the broken parts together and then inlaying as large a piece of hardwood as the size of the neck will permit, placing it so that about half of the inlaid piece lies on each side of the break.

§7. Pegs and Peg Boxes

Where peg-boxes split open or heads split completely off through the peg boxes similar repairs can be made by gluing together the broken parts and afterwards gluing strips of tough veneer on the outside of each side of the neck and peg box, trimming the peg holes so that most of the strain rests on the veneer. The writer has seen many such pieces of workmanship so cleverly done that a close examination was necessary to find the repair.

Often the hole in a peg is too near the side of the peg-box, causing the string to bind against the side of the latter. This may be remedied by boring a new hole nearer the middle of the peg. Wooden pegs can be made to fit perfectly by dipping the peg in powdered pumice stone, then inserting into position and turning round and round as one would grind an ordinary bearing. Pegs may be kept from slipping by an application of dry soap to smooth the bearing, and chalk to tighten, to suit the player. Machine pegs on basses or cellos often slip their cogs; for this the only remedy is to replace the worn cogs. These may be purchased separately and are easily put on.

§8. Fingerboards, Bridges, Etc.

Fingerboards may be raised to the desired height by gluing a piece of hard wood of the proper thickness to the neck under the fingerboard. To lower the fingerboard shave the neck near the body of the instrument until the fingerboard rests at the desired angle.

Bridges should be rounded to conform to the general curvature of the fingerboard, lowering the side of the bridge on the bowed side. Clumsy

bridges should be thinned at the top by revolving slowly on a piece of sandpaper in a flat position. Care should be taken that the bridge is not too thin to withstand the strain of the strings without warping. The feet of the bridge should be cut to the general shape with a knife, then place a sheet of fine sandpaper over the *f* holes and rub the bridge back and forth over the point on the instrument where they should stand, (midway between the inner notches of the *f* holes) holding the bridge firmly in an upright position. This will make the feet fit exactly so the bridge will not fall readily, and is very easily done.

Tail-piece gut, which may be purchased at most music stores, is fastened into the tail-piece by heating in the flame of a match after being inserted, until the ends of the gut expand, whereupon a wrapping of thread is made just behind the expansion and securely tied. Care should be taken that the gut is merely heated and not burned. For temporary repairs a wire may be used, or a hairpin for a violin or viola, but there is danger of a wire breaking the tail-piece. The gut (or wire) should be just long enough to reach the end pin when the tail-piece is in position. If too long the bridge will lean forward and fall when the strings are tightened.

If the strings rattle it is often because they touch the fingerboard when vibrating. This may be remedied by raising the nut slightly. Fingerboards on old instruments often have grooves worn under the strings, which may be removed with sandpaper.

The soundpost may be set up most easily by the use of a soundpost setter of the plier type, made for the purpose. It may also be set by using string or wire in various ways that will permit the removal of the string or wire after the post is in place. The post is inserted through one of the *f* holes and set in an upright position under the right foot of the bridge, then moved about until it rests solidly between the top and bottom of the instrument in an upright position, immediately behind the right foot of the bridge (the foot under the smallest string). Bass soundposts are often glued (or even tacked) into position from the back of the instrument.

§9. Precautions

Owing to the fact that all basses will crack on the slightest provocation it is sometimes advisable to take precautionary measures as follows: flat back basses may be fitted with screws to keep them from cracking by drilling one-eighth inch holes at four equidistant points across the back of the instrument directly over each brace or cross bar. These bars may be located by looking into the instrument through the *f* holes. The screws should not penetrate more than one-half inch and should be of the flathead variety and countersunk. A wood-paste is now available in most paint stores which hardens and can be used to fill these holes and afterward stained to match the color of the instrument. It is also advisable to put similar screws in the four corner blocks of the back and top and in the neck and tail blocks. These corner blocks are small three-cornered blocks placed in the pointed corners of the top and back and are found in all well-made instruments of the viol family.

§10. Replacing Broken Bridges

A broken bridge may be placed in position under tension and will often serve for months if not allowed to lean or tip. Loosen the two outer strings and replace the broken bridge by holding the parts together with the thumb and forefinger of each hand so that when the bridge is erected the tension of the strings will hold it firmly in place, then tighten the outer strings.

§11. Cleaning Bow Hair

Loosen the bow hair and wash with lukewarm water and soap; rinse thoroughly and allow to dry before tightening. Powdered rosin should be applied before the cake rosin is used. If the frog is removed from the stick care should be taken to prevent the tangling of the hair.

§12. Straightening Crooked Bows

Take off the frog by removing the screw from the end of the bow. Hold both ends of the bow firmly, taking care that the hair does not come in contact with the stick. The stick may then be passed back and forth through an alcohol flame while bending to the desired angle. When it is sufficiently heated it will retain the sweep you have given it. Care must be taken not to burn the varnish.

§13. Woodwind and Reed Instruments; Replacing Pads

These instruments may be easily repaired by the players or in the manual training shop.

The most common repair is replacing worn pads. New pads cost very little and are very easily put on. The key, taken off with a small screwdriver, is held over the flame of a match just long enough to loosen the shellac with which the pad is stuck to the key. The old pad is then removed and a new pad selected which is of the exact size as the opening in the key. Next place a drop of stick shellac in the hollow of the key, heat the shellac to the melting point and press the new pad into position before the shellac has had time to cool. When the key is replaced it is well to place a rubber band in such a position that it will press the new pad into conformity with the hole while drying. Best bladder or chamois skin pads should always be used.

§14. Adjusting Pads

Often when new pads are put on keys which are connected with levers it will be found that the old pads, or the new ones, do not close perfectly, due to the fact that the new ones are of different thicknesses than the old. This is sometimes remedied by heating the key with the thickest pad then pressing that key firmly until the surplus shellac is squeezed from beneath the pad, permitting the latter to sink into the hollow of the key more. If the new pad is too thin more shellac may be used.

§15. Adjusting Keys

Many woodwind instruments are judged to be out of tune when in reality it is only a matter of adjusting the keys to open to exactly the proper distance.

§16. Selecting Mouthpieces and Reeds

Clarinetists and saxophonists should use great care in selecting mouthpieces which do not throw their instruments out of tune and with which all registers of the instrument respond equally well when playing loud or soft. Wooden mouthpieces should not be used as they are very apt to warp.

The first consideration of the oboe or bassoon player in selecting reeds should be correct intonation in all registers, after which they may shave or trim the reeds to suit their desires as to ease of blowing.

§17. Repairing Cracks

Slight splits or cracks may be repaired by embedding a pin or screw in such a way as to draw the parts together, closing the crack. Very small cracks may be filled by using a plastic mixture of beeswax and lampblack, or their substitutes, completely filling the crack inside and outside. Correctly repaired cracks do not injure the tone of an instrument but a crack which extends through a hole often causes the pad to leak unless expertly repaired by a professional woodwind repair man.

Most splitting of the joints of woodwind instruments is caused by neglecting to grease the corks on each joint sufficiently.

§18. Broken Keys

Bent or broken keys can be repaired by any jeweller if no repair man is available. Broken keys may be temporarily repaired with stick shellac, or sealing wax.

§19. Cork Joints

Re-corking joints is not really a difficult operation and can be easily performed with a little practice. A piece of sheet cork three-sixteenths of an inch in thickness is cut to the proper length and width and then bevelled at both edges, so as to make a perfect joint where the ends of the cork overlap. Next coat the cork and the joint with shellac and allow to dry until very sticky. The cork is then wrapped about the joint and wrapped quickly with heavy cord until the cork is completely covered, and left to dry. After several hours the cord may be removed and the joint carefully sandpapered to a close fitting size, after which grease is applied. Fine emery cloth is better than sandpaper for this purpose.

A temporary repair may be made by winding thread or string around the joint to the proper thickness, then greasing thoroughly.

§20. Barrel Joints

Barrel joints for clarinets may be replaced when badly cracked. Send the old joint to the factory or a supply house so to be sure to get one of the exact size to fit the instrument.

§21. Brass Instruments; Sticking Valves

Brass instrument troubles are usually valve troubles. Sticky valves are very common and are easily remedied by the following method:

Remove the entire valve from its casing; take the cap off the lower end of the casing, insert the lower end of the valve into the lower end of the casing, first dipping the valve into water then into rotten stone, and proceed to grind as though grinding a machine bearing. Rinse valve and casing thoroughly and replace valve in proper position. Remove one valve at a time and note which way to turn in for replacement. Noisy valves are the result of worn or lost washers under the cap and tip of the valve. They are inexpensive and can be replaced in a few moments.

Weak valve springs may be taken out and stretched until they regain the desired strength.

§22. Slides

Slides should not be allowed to corrode and stick as this condition is preventable by oiling the slides once a week with white vaseline or similar grease. Slides which have stuck may often be removed by inserting a handkerchief and jerking. If a rope is used care must be taken not to jerk too hard or the solder on the braces may be loosened.

§23. Dents

Dents in the bell of a brass instrument may be easily removed by turning a wooden form of the proper size on a lathe in the manual training shop, then inserting the form with pressure and using a soft hammer on the outside if necessary. Dents in the outer part of the bell may be removed by rubbing with a smooth piece of wood. Dents in the curved sections of the instrument require special tools and should be left to a professional repair man or sent to the factory.

Dents in the slides of a trombone require professional attention as these slides are very delicate and they must fit perfectly. Trombone pupils should be made to realize that the slide is made of exceptionally thin material and that the slightest dent or bend will ruin the action. When slides stick because they are dirty they may be ground out in a manner similar to that described for sticky valves.

§24. Water Keys

New springs may be purchased or made when the old one breaks or becomes weak. A rubber band will serve temporarily. If the cork pad drops out a new one may be cut out and applied in the same manner as

described for woodwind repadding. A temporary repair may be made by chewing a bit of paper to a pulp and inserting in place of the cork.

§25. Percussion Instruments; Re-Lapping Drum Heads

Remove the head and dip it in lukewarm water until it becomes saturated, when it may be easily removed from the hoop, then dip again until all creases are taken out. Replace the head without stretching by tucking in about an inch of the head at each side of the hoop, using an ordinary spoon, then at intermediate points so that the tension will be even when the head is tightened. Replace the head and allow it to dry before tightening more than enough to keep the head in place, then remove the head again and allow the inside to dry thoroughly before replacing for use.

§26. New Heads

New heads are applied in the same manner as re-lapping old heads. New heads should be about 4 inches larger than the hoops for snare drums and timpani and six inches larger for bass drums.

§27. Patching Heads

Small breaks in the heads may be temporarily repaired by mending with adhesive tape. Glued-on patches seldom stick because of the vibration of the head.

Save the large pieces of broken bass drum heads for use in replacing tambourin heads. Timpani head skins of sufficient size make good snare drum beater heads and bass drum heads are often used for this purpose.

§28. Tuning Bells and Xylophones

To lower the pitch file or grind on one side to make the bar narrower. To raise the pitch shorten the bar slightly.

APPENDIX C

The Marching Band

§1. Its Importance. §2. The Drum-Major. §3. Signals. §4. Formation. §5. Maneuvers. §6. General Hints.

THE MARCHING BAND

§1. Its Importance

One of the important, though not the most important, functions of the school band is that of participating in processions and other occasions which require playing on the march and maneuvering on the field. In this capacity the appearance of the band is of primary importance and every band should be thoroughly trained in all phases of field tactics. This branch of the work is strictly military and as such must be organized on a military basis. The discipline must necessarily be rigid, for every move of every player is on exhibition every minute the band is in formation.

§2. The Drum-Major

The drum-major is the commanding officer of the marching band in all respects except the selection of the music, a duty that is retained by the leader. In school bands in which the leader seldom plays, directions are usually given by the leader to the drum major, who assumes complete charge of the band for the occasion.

The drum-major usually marches about six feet in front of the center of the band, though the distance may be increased to advantage when the band is large.

The drum-major uses a police-whistle in place of giving spoken orders since his voice would not be heard above the sound of the band. One long blast is sounded as a warning, after which the signal is given with the baton, then one short blast is sounded at the moment the command is to be executed. Take for example the command, "Forward-march"; the long blast is sounded instead of the word "Forward," whereupon the forward signal is given with the baton and the short blast sounded as the signal for the *step-off*. The whistle should be sounded between the beats of the drum to insure its being heard by the players in the rear ranks.

§3. Signals

The baton is grasped near the head of the staff with the ferrule pointing upward and to the right, the back of the hand to the front and below the chin. The baton is returned to this position after each signal is given. The left hand is held at the hip with fingers pointing forward. The drum-major keeps the time of the music when the band is playing, bringing the baton down with the left foot, always.

To Begin Playing: Drum-major sounds whistle; one long blast meaning "attention," then three short blasts indicating that the drums

should sound the "roll-off." If the "roll-off" is to be omitted the drum major faces the band after giving the "attention" signal; extends the right arm to its full length, bringing it down with the first note to be played. If the first note to be played is a "pick-up" or on an unaccented beat the usual up-beat is given with the baton.

To Stop Playing: Drum-major faces the band, extends the right arm to its full length, bringing the baton down on the last note to be played.

To March: Extend the arm to its full length forward, palm upwards, with the ferrule pointing to the front and upward.

To Halt: Sound warning signal; hold the baton horizontally above the head with both hands, bringing it down suddenly to the level of the hips with the last step to be taken. Sound second blast of whistle two steps before the baton is lowered.

Turn Right: Bring the baton to a horizontal position while facing forward, with the ferrule pointing to the right and the head of the baton close to the chin, then extend the arm to its full length to the right. After this signal is given, the drum major usually faces the band with the baton held in a horizontal position with both hands, level with his chin, dressing the front as the turn is made, then assuming his regular position facing the front.

Turn Left: Similar to the right turn, except that the baton is pointed to the left

Counter-March: Give the signal to march, face the band and pass directly through the center of the band. The second blast is sounded just as the drum-major passes the front rank.

Oblique: Similar to the right and left turn. The baton is pointed in the direction to be taken by the band.

To Diminish Front: Let the ferrule fall into the left hand at the height of the eyes, while the right hand grasps the staff at the level of the hips (pointing upwards).

To Increase Front: Let the ferrule fall into the left hand at the height of the hips, while the right hand is held level with the chin (pointing downwards).

§4. Formation

Every player must know his exact position in the ranks so he can take his place immediately on the command, "Formation" or "Fall in." The lines extending from front to rear are called "files" while the lines extending from right to left are called "ranks" or "platoons." The files number from right to left, the file on the right being the *first* file, etc. The ranks are numbered from the front. Thus, the player at the right end of the front row is in the first rank and the first file, while the player directly behind him is in the second rank and first file. The player on the right of each rank is the *guide right* of the rank and all the players in his rank are required to keep in line with him. The front player in each file is the

file leader and all the players behind him are required to keep in line with him, from front to rear of the file.

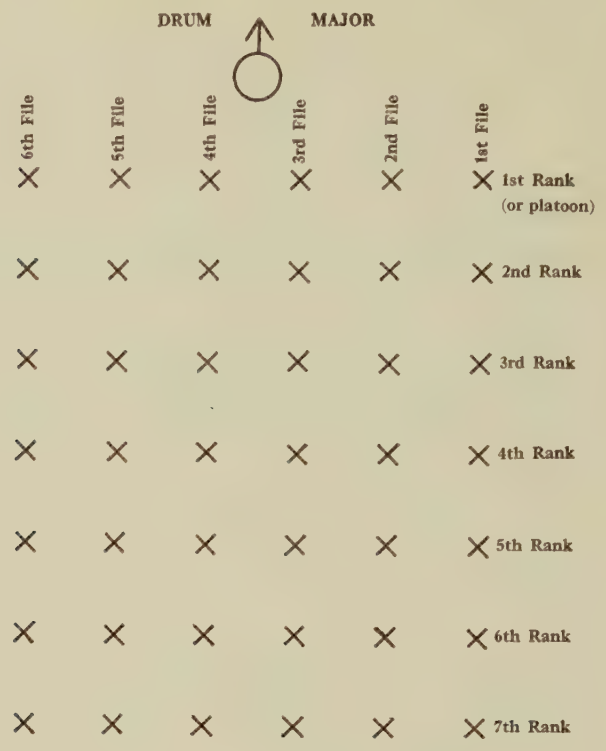


Fig. 1—RANKS AND FILES

Fig. 2 shows the usual military band formation.

Fig. 2—MILITARY BAND FORMATION

While the army band formation is adequate for small bands it develops weaknesses when applied to large bands. In small bands, the players have little difficulty in hearing each other because of the proximity of the players to one another, while in large bands this item becomes a serious problem. For this reason, many large civilian bands have altered the formation in various ways in an effort to bring about better rhythmic unity. Most large bands now place the drums in the middle rank with the brasses in front and the reeds behind. This is done so that all the players can hear the drums, thus lessening the danger of not keeping together, especially when turning corners or passing between tall buildings. This is obviously a step in the right direction for it enables all the players to hear the drums, even if they do not hear each other. Italian military bands have gone a step further and have placed the reeds in the front ranks with the brasses and drums bringing up the rear. Considering the fact that the tone of the brass instruments is projected forward the logic of this step is readily apparent. The musical qualities of such a band should be far superior to that of our American bands with trombones in the front rank and instruments so placed that cohesion is practically impossible in a large band. By comparing the band formation with the seating plan of a large chorus, bearing in mind the relationship of the sopranos to other parts, further changes are at once suggested. Choral conductors have learned that better results are obtainable when the sopranos are placed in the center of the stage, from left to right, extending from the front to the back of the stage, for with this seating arrangement all of the singers can always hear the sopranos, which usually carry the melody.

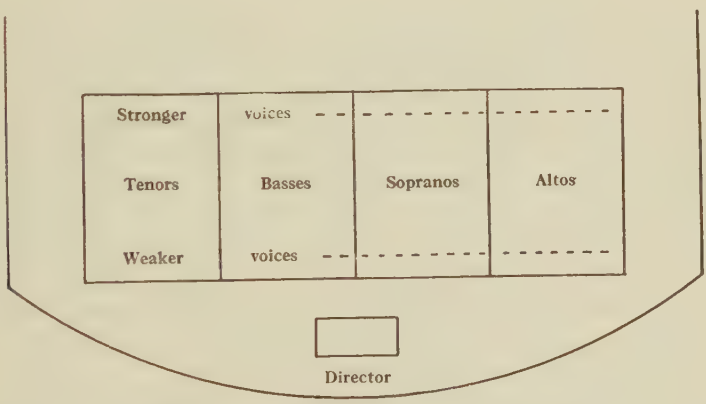


Fig. 3—APPROVED SEATING PLAN FOR LARGE CHORUS

It is more necessary that the players in the marching band hear each other than in a chorus, for there is no other way by which the band musicians can keep together rhythmically. By borrowing ideas from right and left, as it were, the following formation is suggested as worthy of a trial.

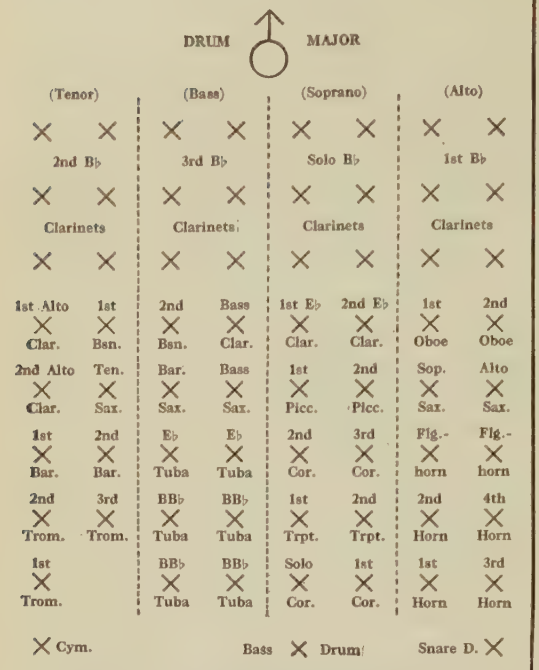


Fig. 4—SUGGESTED FORMATION FOR SYMPHONIC BAND

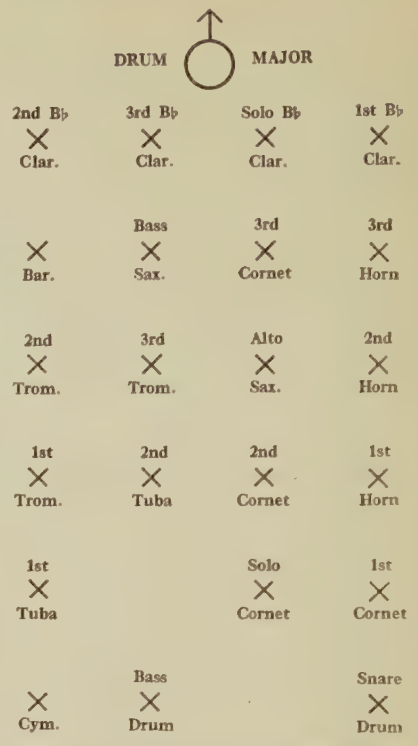


Fig. 5—SUGGESTED FORMATION FOR MINIMUM BAND (22 PLAYERS)

This suggested plan provides for the placing of the melody-playing instruments in the middle files with the cornets and trumpets in the rear, like the soprano section of a large chorus, where the stronger voices are likewise placed in the rear. The next most important part, the bass section, is placed next to the melody section while the instruments which play the inside or harmony parts are placed in the outer files where the players can hear the melody and bass parts. The brass instruments are in the rear ranks, which permits the blending of the tone of the brasses with that of the reeds in the front ranks, while the drums are in the rear, close to the solo cornets and basses. The players in the outer files are abie to hear the melody and bass parts very clearly at all times and perfect rhythmic cohesion is always possible.

While it is impossible to give an exact diagram which will apply to all bands, the accompanying diagrams may serve as a guide as to where to place the various instruments. In determining the number of ranks and files, the matter of keeping the reeds and brasses separated should be kept in mind, though this is not absolutely necessary and is not always possible. There is no harm in leaving spaces in unfilled ranks, though this should be limited to the rear ranks to prevent confusion in maneuvering. It is not necessary to have an even number of files, though the manner of executing some maneuvers is somewhat different when the number of files is uneven.

§5. Maneuvers

The Right Turn: On signal from the drum-major the *guide right* of the front rank advances and turns at half-step, while those in his rank swing around with lengthened steps necessitated by the increased distance to be travelled. The turn is made in a semi-circular fashion. The *guide right* does not stop but advances with short steps along a short semi-circular course while the *guide left* advances with long steps along a longer semi-circular course and the intervening players maintain their line and distance from those on either side.

Fig. 6—RIGHT TURN

The Left Turn: Same as right turn reversed.

The Counter-March: At the signal from the drum-major the players on his right turn *right about* and march to the rear while those on his left turn *left about* and march to the rear, following the drum-major at the usual distance (about six feet). The players in each rank should turn at the same point as those in the preceding ranks. In bands with an uneven number of files it is advisable to have all the players turn *right about* to avoid confusion. After the counter-march the *guide right* becomes *guide left* and vice versa.

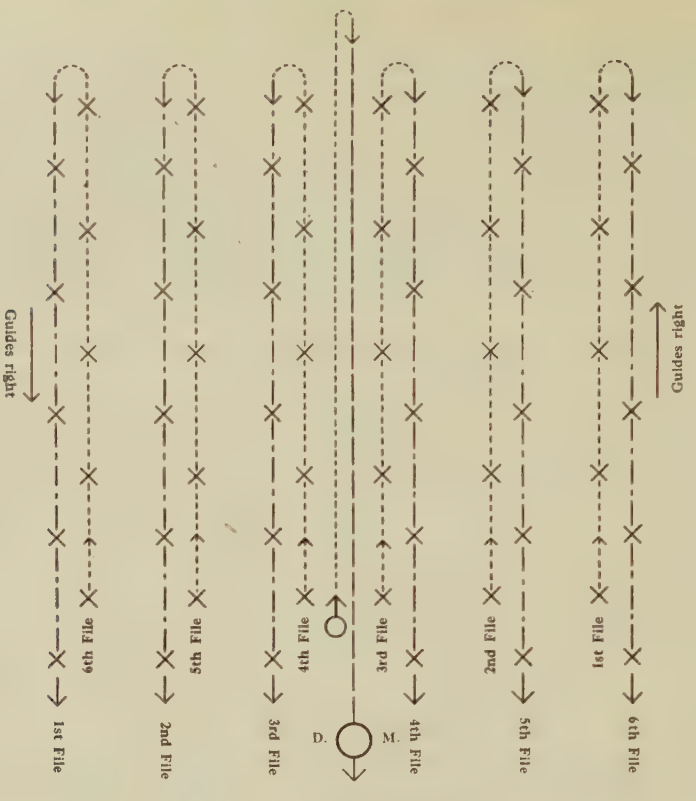


Fig. 7—COUNTER-MARCH

By Twos (right): *Guide right* and the next player march straight ahead with short steps, while the others in the front rank form by twos as they march obliquely to the right, taking their places behind those preceding them. If there are an uneven number of files the *guide left* of the first rank forms with the *guide right* of the second rank, etc. To re-form, the two leaders of each rank march straight ahead with short steps, while the others oblique until they regain their proper positions in their respective ranks.

By Twos (left): Similar to the preceding, but led by *guide left* and the player next to him in his rank.

To Form Circles: At the command the band halts; those in the front rank turn *right face* and march to the right in single file, while those in the rear advance with short steps and repeat the maneuver of the front rank, following the leader of the front rank into circular formation with the drum-major in the center. To re-form, the players *right face* and begin marching in a circle until the front rank reaches the desired position, when the order "Forward march" is given, whereupon those in the front rank *left face* and march through the center of the circle with short steps while the others continue their circular march, forming by ranks as they reach the rear of the front rank, turning *left face* and following the front rank and drum-major.

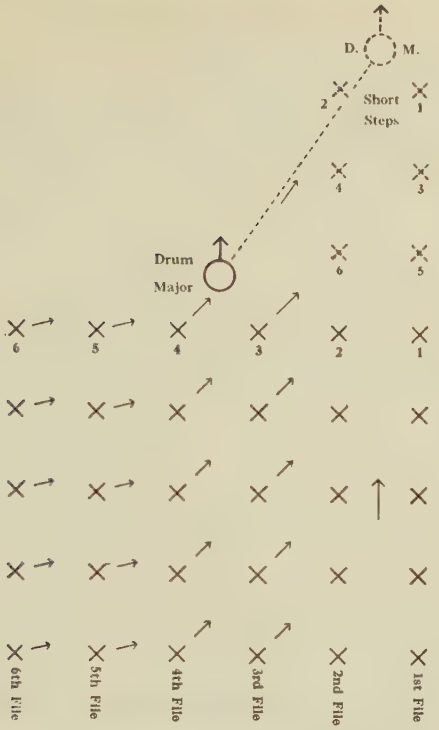


Fig. 8—FORMING BY TWOS, RIGHT

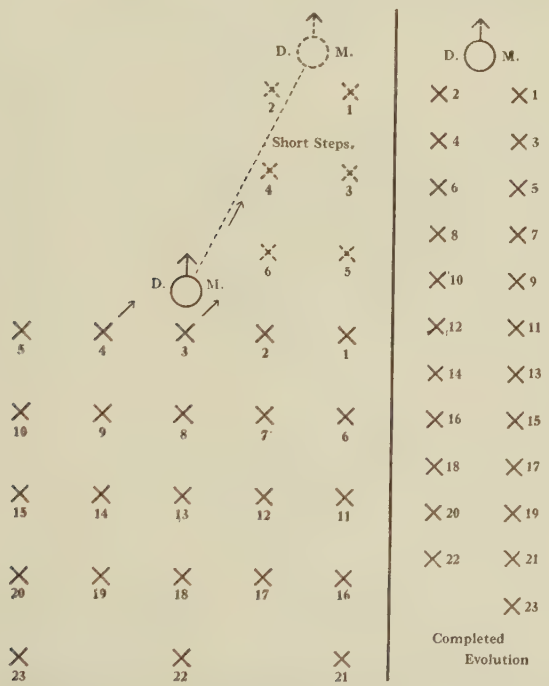


Fig. 9—FORMING BY TWOS WITH UNEVEN NUMBER OF FILES

Fig. 10—"PLATOONS LEFT"

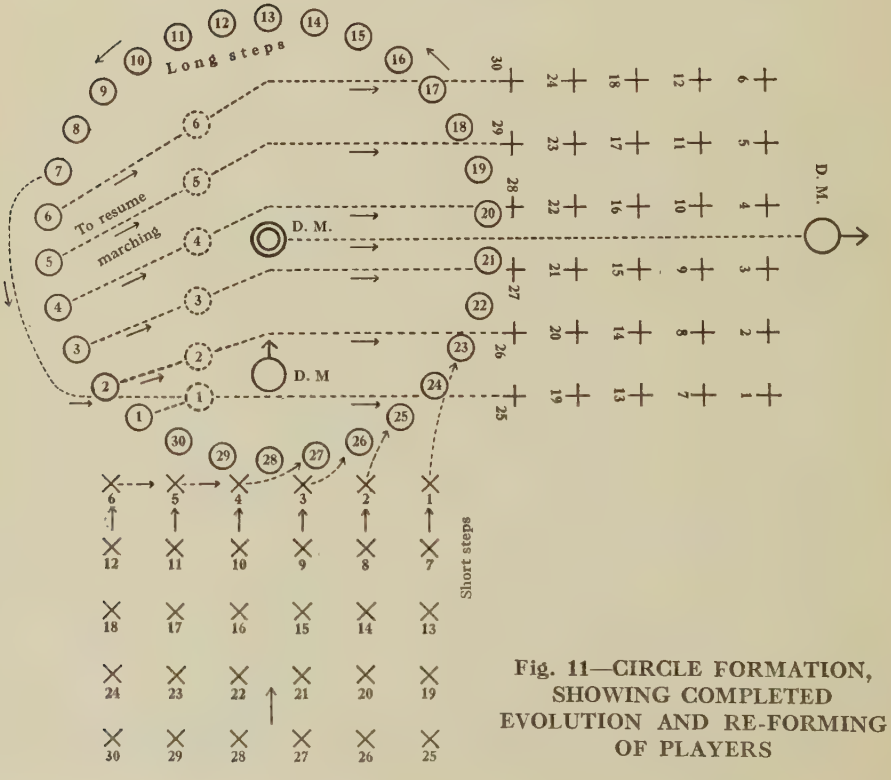


Fig. 11—CIRCLE FORMATION, SHOWING COMPLETED EVOLUTION AND RE-FORMING OF PLAYERS

§6. General Hints

The distance between the ranks (front to back) should be about five feet, while the distance between the files (right to left) should be about three feet. These distances may be varied to suit the conditions, though the ranks should never be closer if the trombones are not in the front rank, as they might be forced to "punch" those in the preceding rank with their slides.

No talking should be permitted while the band is in formation, unless the command, "at rest" is given.

It is very important that the lines should be kept straight at all times. Players must be taught to "dress to the right" which means that they are to keep in line with the *guide right,* who is responsible for the marching of the players in his rank.

Always start marching with the *left foot,* never with the right.

Uniform coats should be kept buttoned. Black shoes should always be worn unless other styles are adopted and worn by all the players. Turn-down collars should never be worn. Military collars are made for the purpose.

The music should be bound in loose-leaf band books, passed out and collected by the *guide right* for each rank, or by the head player in each section. The pieces should be numbered to save time and facilitate signals.

Uniforms should be kept in lockers in the vicinity of the band rehearsal-room and one member of the band should act as custodian of the uniforms. Uniforms should be inspected at intervals and measures provided for their care and maintenance.

Instruments should be cleaned and polished before each public appearance of the band.

Marching drill may be delegated to R. O. T. C. or physical education teachers if competent. Marching practice may be given without instruments at first, though it is very important that the players become accustomed to playing on the march, as many new problems are involved.

For long parades, marches should be selected which do not tax the brass players excessively. Marches with drum interludes and those with the melody in the bass a part of the time are less fatiguing.

Playing when marching up hill is extremely fatiguing and should be avoided when possible.

Oboe and bassoon are very difficult to play on the march and players of these instruments should double on drums or cymbals, since more drummers would not be harmful on the march.

When there are several bands in the same parade it is advisable to have a pre-arranged order of playing so that only one band is playing at a time in the same vicinity.

The military step is 28 inches and the tempo 128 steps to the minute or, slightly faster than two steps to a second. The tempo should be uniform whether the band is playing or just marching. Most bands increase the tempo when playing. A shorter step may be used but the tempo should not be increased because of this fact.

When a nearby band is playing, the drummers of the silent band should either stop beating time or keep the same time as the performing band.

Expression marks have the same meaning when on the march as in the concert hall. Most bands play only *forte* when marching and their *forte* soon sounds like *mezzo-forte* to the listeners, because of the lack of contrast. If you want a strain to sound very loud, play the preceding strain very soft and the result will be gratifying.

Solo cornet players should alternate on the march else both will give out at the same time, leaving the band with inadequate melody. The same applies to the other brass instruments.

Phrasing is much more difficult on the march because of the shortness of breath of the players caused by playing and marching at the same time. Players are apt to play everything *staccato* when marching and it is necessary to drill them in smooth playing more than ever when practising marching.

When the band marches, it is advisable to have both the solo and first B♭ cornet players play the solo B♭ cornet part; the second and third cornets, the first cornet music, and the flügelhorns the second and third cornet music. By doubling the number of players on the solo and first cornet parts the players may alternate, one playing at a time, and thus avoid excessive fatigue. An extra first trombone would also enhance the marching band.

If a bassoon or oboe player has the qualifications of a drum-major it would be advantageous to the band to have him act as such.

Trombone and cornet players should hold their instruments up at a uniform angle when playing on the march.

A uniform carrying position should be decided upon by the players of each kind of instrument so that the appearance will not suffer when the band is not playing.

The drum-major should see that the drums keep steady tempo on the march. In some cases it may be necessary for him to indicate the tempo with the baton.

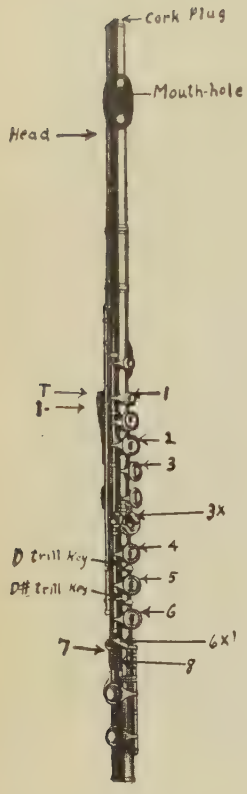
All the players should look straight ahead while the band is marching or standing in formation. It is undignified and amateurish for players to nod to friends on the sidewalk as the band marches down the street.

APPENDIX D

Playing Position and Fingering Charts

The succeeding pages of information as to the care of instruments, position and breathing, tuning, together with pictures showing correct playing position, descriptive cuts of instruments and fingering charts are reproduced here exactly as they appear in the Students' Books of "Instrumental Technique" except that the pictures in the Students' Books are shown as though seen through a mirror so the student may place his book beside a mirror and compare his position with that in the picture, while the pictures in this book are reversed to show the correct position as seen by the teacher observing the pupil. All the material in this Appendix is taken from *The Universal Teacher* by Maddy and Giddings.

FLUTE OR PICCOLO



CORRECT POSITION

CARE OF THE INSTRUMENT

Keep your flute in its case when not in use. Wipe the instrument dry inside and out after using. Attach a small weight to a string tied to the cloth. Drop the weight through each joint and pull the cloth through carefully. Oil inside and out, if wooden flute, once a month when perfectly dry. Use sweet oil. Oil the keys once a month by dropping a drop of thin oil at each end of each axle and at the base of each spring. If pads become sticky, run a cloth under them, then dust under the pads with talcum powder.

POSITION AND BREATHING

When practicing at home look in the mirror often and see that your position is exactly like the picture in the "Students' Book" and that you breathe properly, chest high and still, the abdominal and lower rib muscles doing the work.

TUNING

D♭ Flute or Piccolo: Sound A (two fingers down) and match this tone with B♭ on the pitch-pipe or piano by sliding the mouthpiece joint in or out.

TUNING

C Flute or Piccolo: Sound B♭ (two fingers and thumb down) and match this tone with B♭ on the pitch-pipe or piano by sliding the mouthpiece joint in or out.

TUNING (Orchestra)

C Flute or Piccolo: Sound A (two fingers down) and match this tone with A on the pitch-pipe or piano by sliding the mouthpiece in or out.

Fingering Chart for Flute or Piccolo

Note:- **Fingering for Boehm system is marked under the notes. Fingering for Meyer system is marked above the notes where it differs from Boehm system. Fingering for Piccolo is the same as Flute except that keys No. 7 & 8 are missing.**

(a) Numerals 1 to 8 indicate the six holes covered by the finger plates and the two keys which close holes when pressed, number 1 being nearest the mouthpiece.

(b) x placed after a number means to press the key that sharps the tone indicated by the number.

(c) Where only one figure appears it includes all the lower figures, that is, figure 6 placed under a note means to close holes 1 to 6 inclusive.

(d) Where more than one numeral appears the upper one includes all those nearer the mouthpiece while the others indicate only the hole indicated. Thus: $\frac{3}{6}$ means 1,2,3,6.

(e) 01 means hole 1 without the thumb.

(f) T0 means the thumb without the hole number 1.

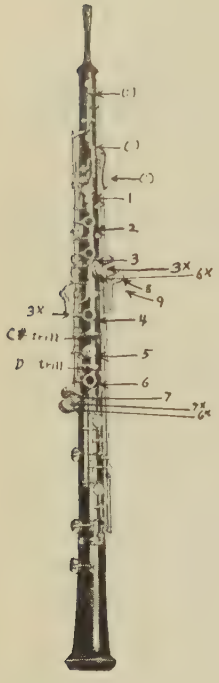
(g) $\frac{0}{6}$ means 0, 2, 3, 4, 5, 6. and $\frac{0}{7}$ means 0,2,3,4,5,6,7.

(h) The D sharp key (6x) is held open for all tones above D except the two highest notes on the above chart.

(i) 1— means the first hole and the thumb closing the B flat key.

(j) 3x means the G♯ key without closing the hole

OBOE



CORRECT POSITION

The new, or conservatory system oboe is much easier to learn than the old, imperfect system. It is more expensive but it is the only one now used by professional players. Students should get the new system instead of the old, if possible.

CARE OF THE OBOE

Keep your oboe in its case when not using. Wipe the instrument dry inside and out after using. Special cleaners or swabs are made for this purpose. Oil the inside once a month when perfectly dry. Use sweet oil. Oil the keys once a month by dropping a drop of thin oil at each end of each axle and at the base of each spring.

If the pads become sticky, run a cloth under them, then dust under them with talcum powder.

Be very careful not to bend the keys when putting the instrument together or taking it apart, or to get the tiny set-screws out of adjustment.

Learn to trim and adjust your reeds as soon as possible. This requires a great deal of practice. Remove the reed before you lay the instrument down. Wrap the reeds in cotton and put them in the reed case when not using.

POSITION AND BREATHING

When practicing at home look in the mirror often and see that your position is exactly like the picture in the "Students' Book" and that you breathe properly, chest high and still, abdominal and rib muscles doing the work.

TUNING

The pitch of the oboe can be changed very little. By pulling the reed out a little the pitch can be lowered. When you become very expert in trimming reeds you will learn how to tune the instrument in another way.

HOW TO TRIM REEDS

If the reed blows too hard, scrape it thinner at the beginning of the cut farthest from the point. This also lowers the pitch of the instrument. If it blows too easily, clip the end very slightly. This raises the pitch of the instrument. Use a very sharp knife. Never use scissors, they will split the reed at the point. If the reeds leak at the sides, wind transparent gummed paper tape once around them to within half-inch of the point. To keep the opening between the points of the reeds of the proper size, wind a piece of the finest copper wire (that from a flexible electric light cord or brass picture wire will do) twice around the reeds at the middle of the taper. This wire can be slipped up or down as necessary.

Fingering Chart for Oboe

Fingering under the notes is for Conservatory system oboe. Fingering above the notes is for Military system oboe where it differs from Conservatory system.

EXPLANATION

(1) Figures 1 to 6 indicate the six holes or finger plates on the upper side of the instrument numbering from the one nearest the mouthpiece. Figures 7, 8 and 9 indicate the keys which close the holes nearest the bell.

(2) The sign (x) placed after a figure means to press the key which sharps the tone indicated by the fingering. (x = sharp)

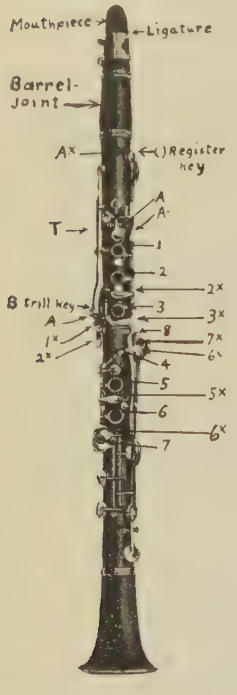
(3) Where only one figure appears it includes all the holes or plates nearer the mouthpiece. Where more than one figure appear, all except the first indicate only the hole or plate of like number. (3,5 means 1,2,3,5.)

(4) A dot (·) placed over the fingering indicates the first (lower) octave key. Two dots (:) mean the second or upper octave key

(5) The fingering in brackets is optional.

(6) $\begin{matrix}0\\6\end{matrix}$ means $\begin{matrix}0\\2\\3\\4\\5\\6\end{matrix}$

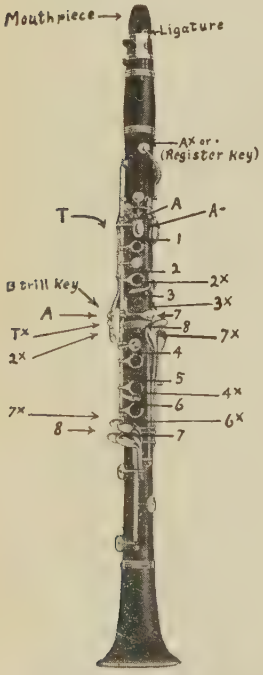
B♭ CLARINET and BASS CLARINET
E♭ CLARINET and ALTO CLARINET



ALBERT SYSTEM

MOUTHPIECE

CORRECT POSITION



BOEHM SYSTEM

The Boehm system clarinet is much better and easier to play than the old or Albert system. It is recommended for all students.

CARE OF THE INSTRUMENT

Keep the instrument in its case when not in use.

To put on a reed, lay the thin end of the reed even with the tip of the mouthpiece, hold it firmly with the left thumb, place the ligature, being careful not to let it touch the end of the reed. Do not tighten the ligature screws very tightly or the mouthpiece will become warped.

Wipe the clarinet dry inside and out after using. Attach a small weight to a string tied to a cloth. Drop the weight through each joint and pull the cloth through carefully.

Oil the inside once a month when perfectly dry. Use sweet oil. Oil the keys once a month by dropping one drop of thin oil at each end of each axle and at the base of each spring.

If the pads become sticky, run a cloth under them, then dust under them with talcum powder.

Fingering Chart for Clarinet

1. Fingering for Boehm system clarinet marked below the notes. Where the fingering for Albert system differs it is indicated above the notes.
2. T = left thumb.
3. Numerals 1 to 6 indicate the six holes on the upper side of the instrument. (Number 1 is nearest the mouthpiece.) Numerals 7 and 8 indicate the two keys which close the two holes nearest the bell.
4. A dot (·) placed over fingering indicates the register key, which is operated by the left thumb.
5. The sign (x) placed after a figure means to press the key that sharps the tone with the given fingering. (x = sharp.)
6. A means the A key. (The key just above the hole number one.)
7. A- means the A flat key. (The key beside the A key.)
8. When only one figure is used it means to include all the holes nearer the mouthpiece. $\left(3 = \frac{1}{2}{}_{3}\right)$
9. When more than one figure is used all except the first one indicate only hole of like number. $\left(\frac{3}{5} = \frac{1}{2}{}_{3}{}_{5}\right)$
10. 0 means open. (No holes closed.)
11. $\frac{0}{1}$ means number one without the thumb.
12. The fingering in brackets is optional.

Note:- Certain of the higher tones will be better in tone if the E flat key is added to the given fingering (6x). This differs somewhat with different instruments and the student should ascertain which suits his instrument and revise the chart accordingly.

CLARINET (*Continued*)

CARE OF THE INSTRUMENT (*Continued*)

Keep the mouthpiece clean by running a cloth the size of a handkerchief through it after each practice.

Keep the reed very clean and do not clamp it tightly to the mouthpiece or the mouthpiece will warp. Always loosen the ligature after playing.

Handle the instrument carefully at all times and especially when taking apart and putting together the joints. There is danger of bending the overlapping keys.

POSITION AND BREATHING

When practicing at home look in the mirror often and see that your position is exactly like the picture in the "Students' Book" and that you breathe properly, chest high and still, the abdominal and rib muscles doing all the work.

TUNING

B♭ Clarinet: Sound C (three fingers and thumb down). Tune to B flat on the piano or pitch-pipe by sliding the mouthpiece in or out.

TUNING

E♭ Clarinet: Sound G (open). Tune to B flat on the piano or pitch-pipe by sliding the mouthpiece in or out.

HOW TO TRIM THE REED

If the reed blows too hard scrape it thinner at the beginning of the cut farthest from the point. If it blows too easily clip off the end very slightly. Use a sharp knife. Never use scissors, they will split the reed.

C MELODY SAXOPHONE

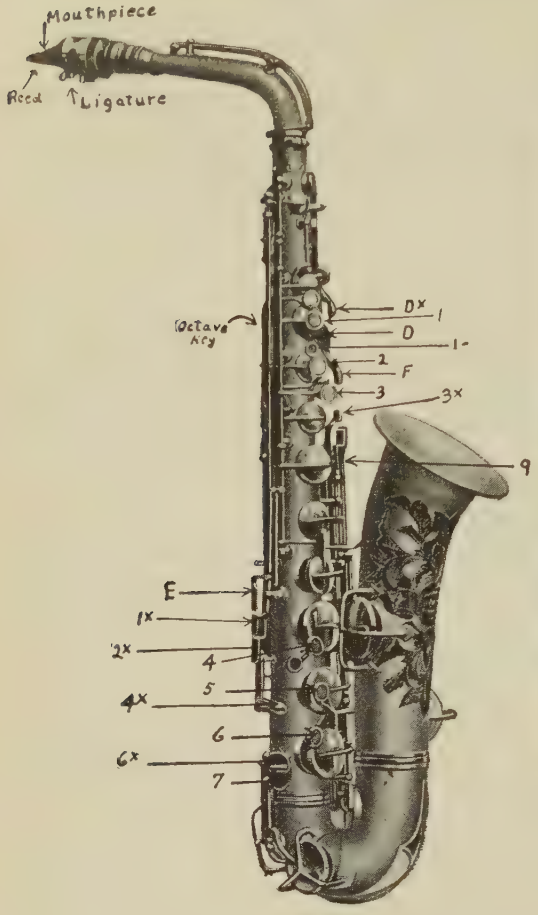
B♭ SOPRANO SAXOPHONE

B♭ TENOR SAXOPHONE

B♭ BASS SAXOPHONE

E♭ ALTO AND BARITONE SAXOPHONE

C Melody Sax., B♭ Sop. Sax., B♭ Ten. Sax., B♭ Bass Sax., E♭ Alto and Bar. Sax.



CORRECT POSITION

CARE OF THE INSTRUMENT

To put on a reed, lay the thin end of the reed even with the tip of the mouthpiece; hold it firmly with the left thumb while you place the ligature, being careful not to let it touch the tip of the reed. Do not tighten the ligature screws very much or the mouthpiece will become warped.

Keep the instrument in its case when not in use. Oil the keys often.

Clean the mouthpiece and "goose-neck" after each practice by running a piece of cloth about the size of a handkerchief through them. Attach a small weight to a string and the cloth at the other end of the string. Drop the weight through and pull the cloth through carefully.

If the pads become sticky run a cloth under them, then dust under them with talcum powder.

Keep the reed in the reed case when not in use.

POSITION AND BREATHING

When practicing at home look in the mirror often and see that your position is exactly like the picture in the "Students' Book," and that you breathe properly, chest high and still, abdominal and lower rib muscles doing all the work.

TUNING

Tune by sliding the mouthpiece in or out. For C Saxophone, tune B♭ (two fingers and key down) to B♭ on the pitch-pipe or piano. For B♭ Saxophone, tune C (second finger down) to B♭ on the pitch-pipe or piano. For E♭ Saxophone, tune G (three fingers down) to B♭ on the pitch-pipe or piano. If the instrument is an alto the tone will be one octave lower than the pitch-pipe; if it is a baritone it will be two octaves lower.

HOW TO TRIM REEDS

If the reed blows too hard scrape it thinner at the beginning of the cut farthest from the point. If it blows too easily clip off the end very slightly. Use a very sharp knife. Never use scissors, they will split the end of the reed.

Fingering Chart for Saxophone

1. Figures 1 to 6 indicate the finger-plates, numbering from the one nearest the mouthpiece. Figures 7, 8 and 9 indicate the keys which close the holes nearest the bell.

2. The sign (x) placed after a figure means to press the key which sharps the tone indicated by the fingering. (x = sharp.)

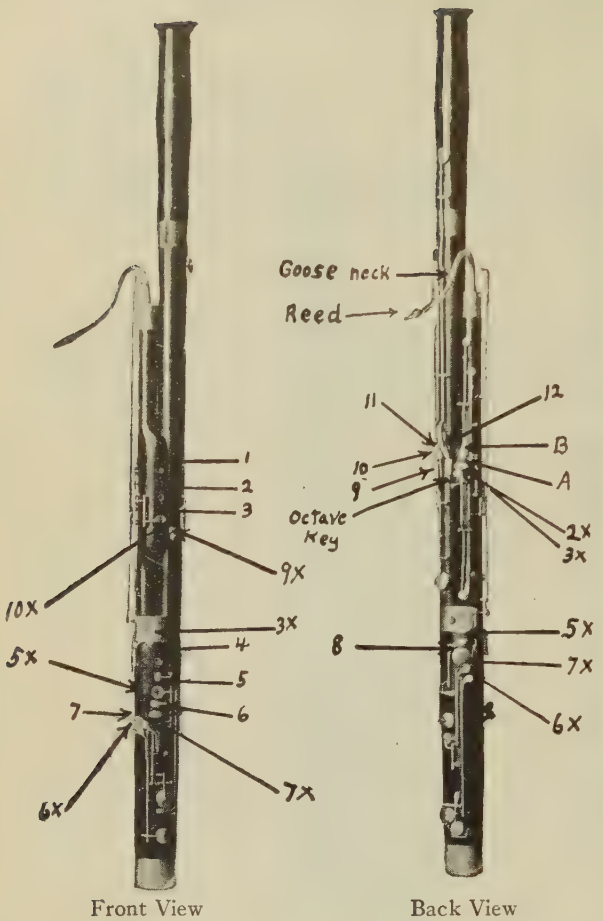
3. Where only one figure appears it includes all the plates nearer the mouthpiece. When more than one figure appears, all except the first indicate only the plate of like number.

4. The letters D, E and F, and Dx indicate the four keys which open the four holes nearest the mouthpiece, exclusive of the octave-key.

5. Fingering in brackets is optional.

6. The E and F keys are not usually found on soprano, baritone or bass saxophones.

BASSOON



Front View Back View

CORRECT POSITION

CARE OF THE INSTRUMENT

Keep the instrument in its case when not in use.

Wipe the bassoon dry inside and out after each practice. Special bassoon cleaners or swabs may be purchased for this purpose.

Oil the inside once a month when perfectly dry. Use sweet oil. Oil the keys once a month by dropping one drop of thin oil at each end of each axle and at the base of each spring.

If the pads become sticky run a cloth under them, then dust under them with talcum powder.

Never lay the instrument down without taking out the reed and putting it in its case and putting the "S-pipe" or "goose-neck" in the open end of the instrument.

POSITION AND BREATHING

When practicing at home look in the mirror often and see that your position is exactly like the picture in the "Students' Book" and that you are breathing properly, chest high and still, the abdominal and lower rib muscles doing all the work.

TUNING

It is possible to slightly lower the pitch of the bassoon by drawing the goose neck slightly from its socket. Tune A (five fingers down) with A on the piano or pitch-pipe. When you become very expert in trimming reeds you will learn to tune the instrument in another way.

HOW TO TRIM REEDS

If the reed blows too hard, scrape it thinner at the beginning of the cut farthest from the tip or point. This lowers the pitch of the instrument. If it blows too easily clip off the end very slightly. This raises the pitch of the instrument. Use a very sharp knife. Never use scissors, they will split the ends.

If the reed leaks at the sides, wind transparent gummed paper tape once around it to within an inch of the tip.

To keep the opening between the reeds of the proper size, slide the wire up or down as needed.

Fingering Chart for Bassoon

(Heckel System)

B♭ B C C♯ D♭ D D♯ E♭ E F F♯ G♭ G G♯ A♭ A
12 11 10 10× 9 9× 8 7 7× 6 6× 5
⊕⊕
C C♯ D♭ D D♯ E E F F♯ G♭ G G♯ A♭ A A♯ B♭
A♯ B♭ B
5× 4 3 3× 2 2× (1 3) 1 0 7× 6 6× 5 5×
B C C♯ D♭ D D♯ E♭ E F F♯ G♭ G G♯ A♭ A A♯ B♭ B C
4 3 3× 2 (2×) (1 3) 5× A Key ❋ A Key B♭ Key B Key ⊕ A Key B Key A Key B Key B Key

1. Figures 1 to 6 indicate the six holes on the upper two joints, number one being nearest the mouthpiece. (Number six is usually closed by a key.)

2. Figures 7 to 12 indicate the keys which close holes, numbering from hole number six to the end of the instrument, numbering away from the mouthpiece.

3. The sign (x) placed after a figure means to press the key which sharps the tone indicated by the given fingering.

4. Where only one figure appears it includes all the holes nearer the mouthpiece. Where more than one figure is given all except the first indicate only the hole of like number.

5. $\binom{0}{6}$ and $\binom{0}{7}$ mean $\begin{matrix}0\\2\\3\\4\\5\\6\end{matrix}$ and $\begin{matrix}0\\2\\3\\4\\5\\6\\7\end{matrix}$

6 Fingering in brackets is optional.

⊕ The B-key opens the hole nearest the mouthpiece, except the octave key.

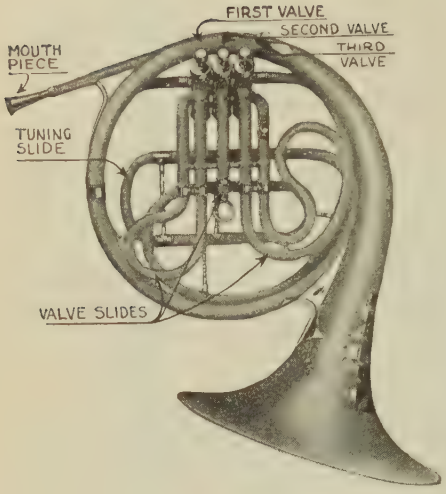
❋ The A-key opens the second hole from the mouthpiece.

⊕⊕ If the instrument has an octave key it should be held down when playing the notes above the dotted line.

The fingering in the upper register varies with different makes of instruments and the student should experiment until he finds the fingering best suited to his instrument and revise the chart accordingly.

The tenor clef is included in the range in which it is sometimes used.

FRENCH HORN



CORRECT POSITION

CARE OF THE INSTRUMENT

Keep the horn in its case when not in use.

Grease the tuning slide and valve slides with vaseline or mutton tallow at least once a month.

Moisten the valves with saliva before playing and whenever they begin to stick. Never use oil on the valves unless you use a special preparation called "valve oil" which must be used continually if once begun. Clean the valves with ammonia occasionally.

POSITION AND BREATHING

When practicing at home look in the mirror often and see that your position is exactly like the picture in the "Students' Book" and that you are breathing properly, chest high and still, abdominal and lower rib muscles doing all the work.

TUNING

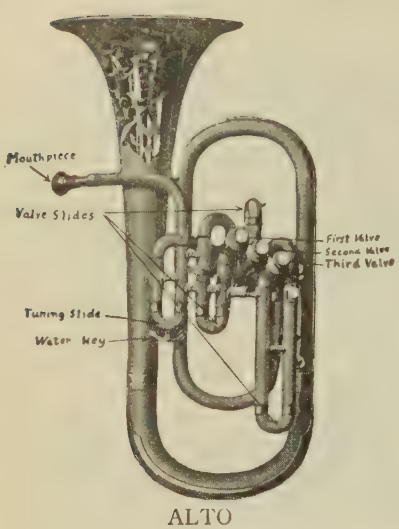
Tune F (first valve down) to B flat on the pitch-pipe or piano, the horn tone sounding an octave lower than the pitch-pipe. Tune by sliding the tuning slide in or out.

Fingering Chart for French Horn

1. The figures under the notes indicate which valves or pistons to use, the first valve or piston being the one nearest the mouthpiece.

2. The fingering in brackets is optional and may be used in cases where it is easier, providing it is "in tune". Sometimes the optional fingering sounds better than the regular fingering.

E flat ALTO, MELLOPHONE OR BALLAD HORN



ALTO

CARE OF INSTRUMENT

Keep the instrument in its case when not in use.

Grease the tuning slide and valve slides with vaseline or mutton tallow at least once a month.

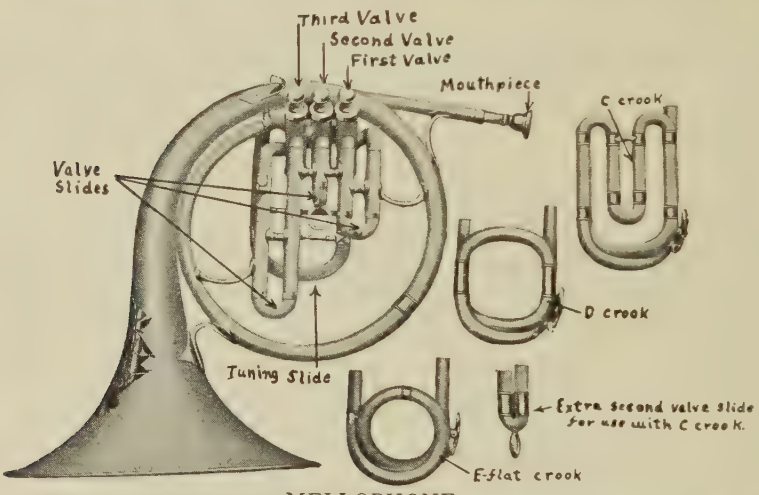
Moisten the pistons with saliva before playing and whenever they begin to stick. Never use oil on the valves or pistons unless you use a special preparation called "valve oil" which must be used continually if once begun. Clean the valves or pistons with ammonia occasionally.

POSITION AND BREATHING

When practicing at home look in the mirror often and see that your position is exactly like the picture in the Students' Book" and that you breathe properly, chest high and still, abdominal and lower rib muscles doing all the work.

TUNING

If you are using the mellophone be sure the E flat crook is in and you will tune as follows: Tune G (open) to B flat on the pitch-pipe or piano. The tone of your instrument (either alto or mellophone) will be an octave lower than the pitch-pipe. Tune by sliding the tuning slide out or in.



MELLOPHONE

CORRECT POSITION

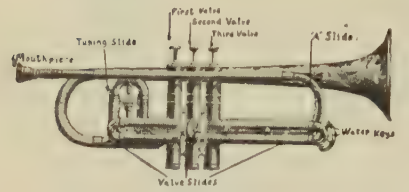
CORRECT POSITION

Fingering Chart for E Flat Alto and Mellophone

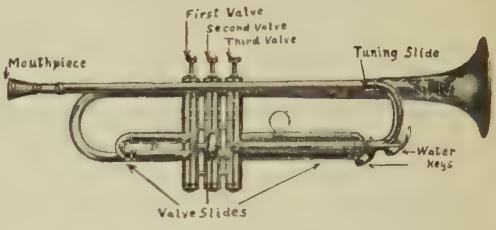
1. The figures indicate the valves or pistons to be pressed down, number one being nearest the mouthpiece.

2. The fingering in brackets is optional and may be used in cases where it is easier providing it produces tones that are in tune.

B flat CORNET, TRUMPET AND FLUEGEL HORN



CORNET OR
FLUEGEL HORN



TRUMPET

Left View
CORRECT POSITION

Right View
CORRECT POSITION

CARE OF INSTRUMENT

Keep the instrument in its case when not in use. Grease the tuning slide, A slide and valve slides with vaseline or mutton tallow at least once a month.

Moisten the pistons with saliva before playing and whenever they begin to stick. *Never* use oil on the pistons unless you use a special preparation called "valve oil" which must be continually used if begun. Clean the pistons and valve chambers with ammonia occasionally.

POSITION AND BREATHING

When practicing at home look in the mirror often and see that your position is like the picture in the "Students' Book" and that you breathe properly, chest high and still and the abdominal and lower rib muscles doing the work.

TUNING

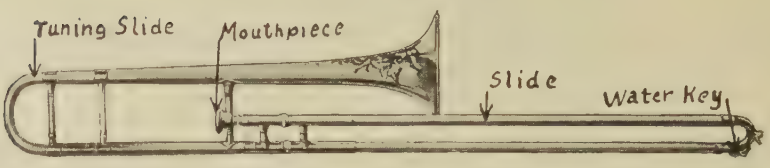
Blow Do, Sol, high Do, and either Do should sound like B flat on the piano or pitch-pipe. Move the tuning slide in or out until it does.

Fingering Chart for Cornet Trumpet or Fluegel Horn

1. The figures indicate the valves or pistons to be pressed down, number one being nearest the mouthpiece.

2. The fingering in brackets is optional and may be used in cases where it is easier providing it produces tones that are in tune.

SLIDE TROMBONE



CORRECT POSITION

CARE OF THE INSTRUMENT

Keep the instrument in its case when not in use.

Grease the tuning slide at least once a month with vaseline or mutton tallow.

Be very careful not to dent the slide. Oil the slide every time you use the instrument. Keep a bottle of "trombone oil" in the case. Use nothing but *trombone oil.*

Clean both sections of the slide at least once a month with a cloth saturated with ammonia. Be very careful not to dent the slide when using the ram-rod which should come with every instrument.

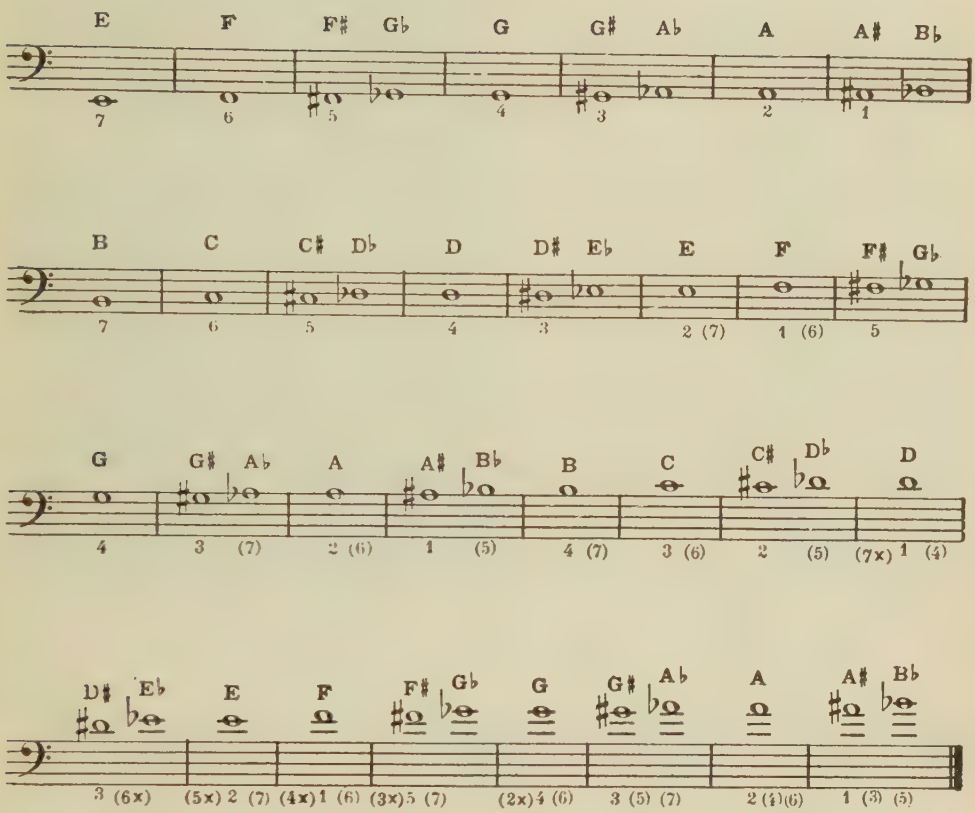
POSITION AND BREATHING

When practicing at home look in the mirror often and see that your position is exactly like the picture in the "Students' Book" and that you breathe properly, chest high and still, abdominal and lower rib muscles doing all the work.

TUNING

Tune B flat (first position) with B flat on the pitch-pipe or piano, the trombone tone sounding an octave lower than the pitch-pipe. Tune by moving the tuning slide in or out.

Position Chart for Trombone



The figures below the notes indicate the positions of the slide. When the slide is closed it is said to be in the first position. The other positions are:

2nd position, extend the slide 3 ½ inches.

3rd " " " " 7 "

4th " " " " 10 ½ "

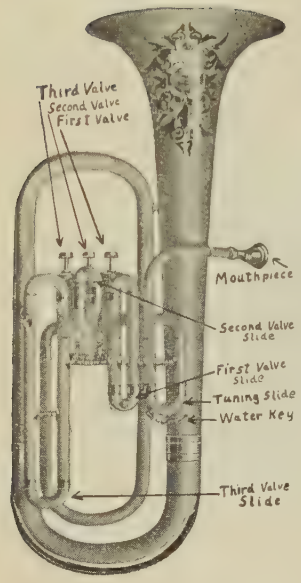
5th " " " " 14 "

6th " " " " 17 ½ "

7th " " " " 21 "

Note: The positions in brackets may be used in place of the regular positions in cases where it is easier. Positions followed by an x are flat and it is necessary to move the slide to a point about 1 inch abve the position indicated.

BARITONE



BARITONE

CORRECT POSITION

CARE OF THE INSTRUMENT

Keep the instrument in its case when not in use.

Grease the tuning slide and valve slides with vaseline or mutton tallow at least once a month. Moisten the valves or pistons with saliva before playing and whenever they begin to stick. Never use oil on the valves unless you use a special preparation called "valve oil" which must be used continually if once begun. Clean valves with ammonia occasionally.

POSITION AND BREATHING

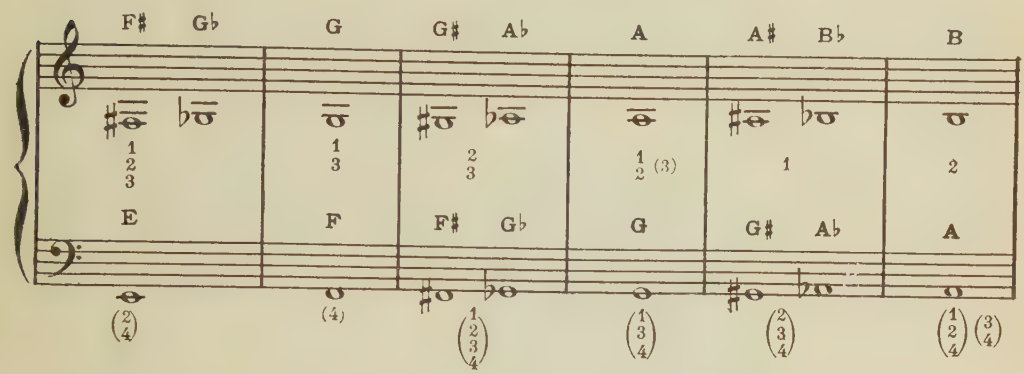
When practicing at home look in the mirror often and see that your position is exactly like the picture in the "Students' Book" and that you breathe properly, chest high and still, abdominal and lower rib muscles doing all the work.

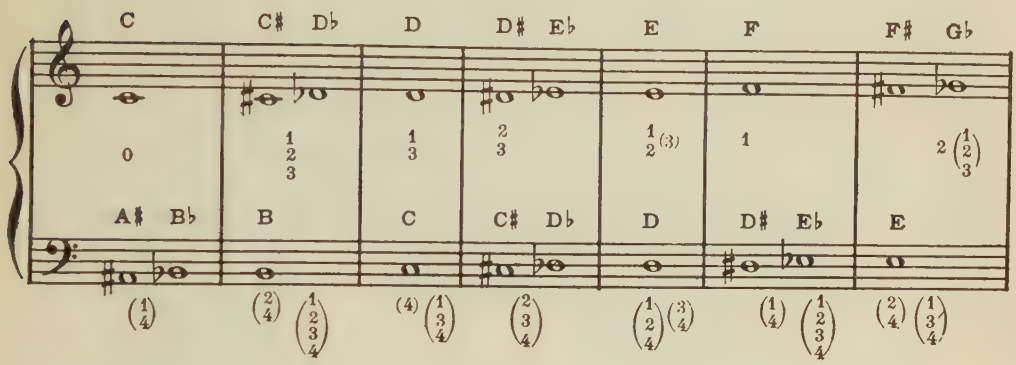
TUNING

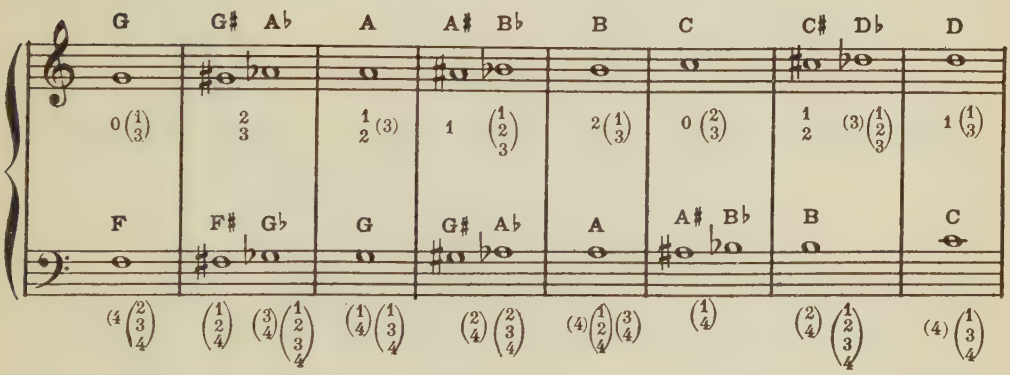
Tune B flat (open) to B flat on the pitch-pipe or piano. Tune by sliding the tuning slide in or out. The tone will sound an octave lower than the tone of the pitch-pipe.

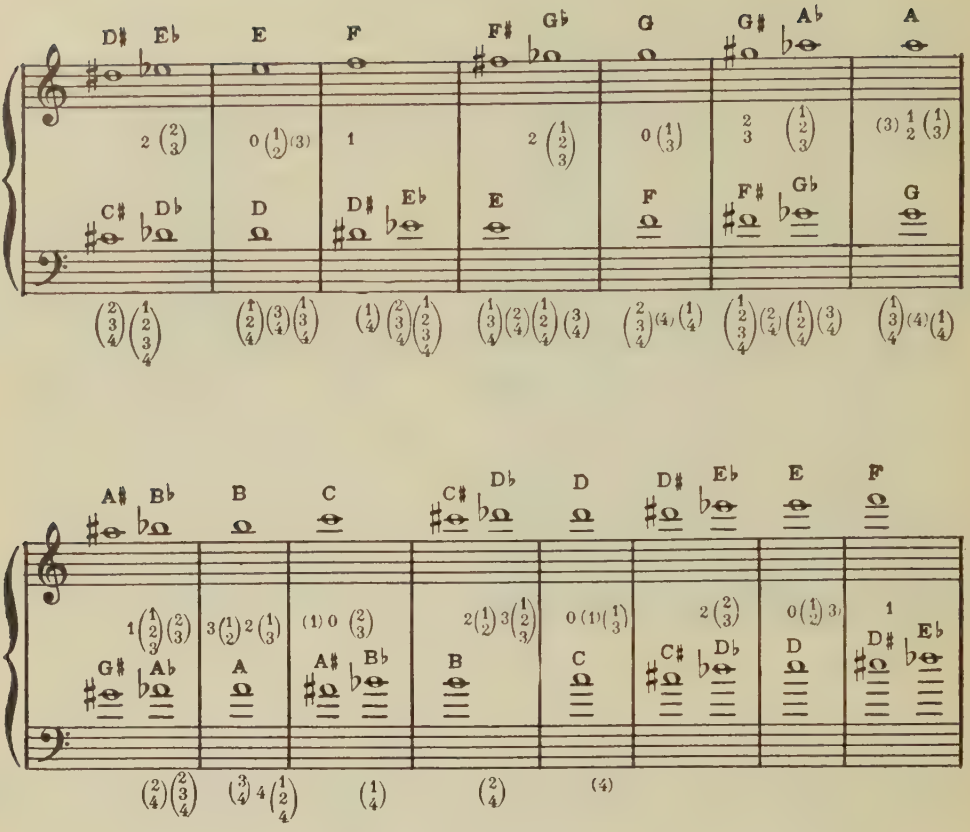
Fingering Chart for Baritone or Euphonium

The figures indicate the valves or pistons to be used, number one being nearest the mouthpiece.





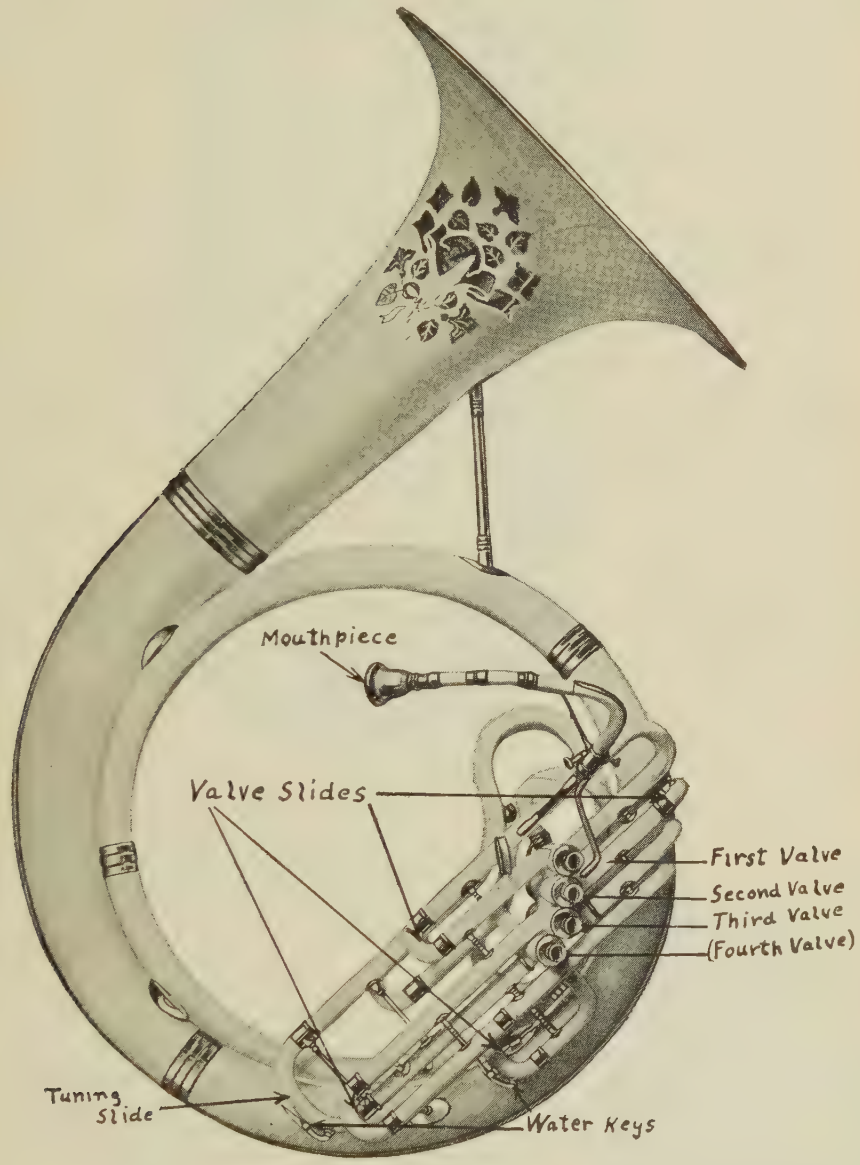




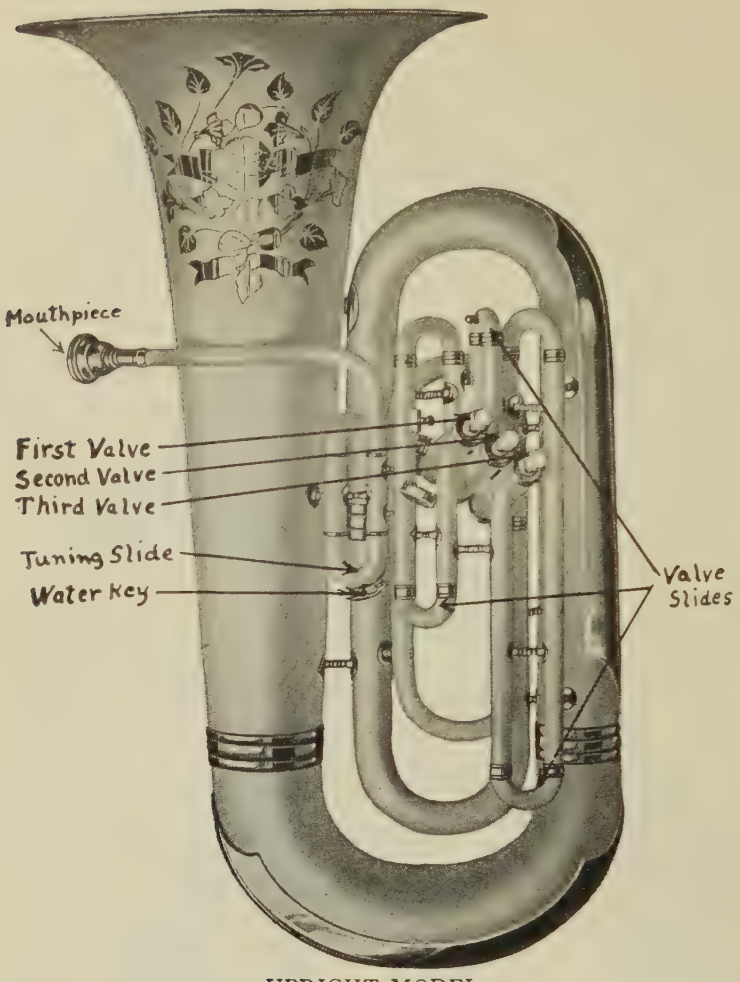
Additional tones playable on instruments equipped with a fourth valve. Do not confuse this fourth valve with the valve used to connect the smaller bell on a Euphonium. The fourth valve may be used in place of the first and third valves as shown in brackets below the notes in the bass staff.

TUBA

HELICON MODEL



TUBA



UPRIGHT MODEL

CARE OF THE INSTRUMENT

Keep the instrument in its case when not in use.

Grease the tuning crook and valve slides with vaseline or mutton tallow at least once a month. Moisten the valves with saliva before every practice and whenever they begin to stick. Never use oil on the valves unless you use a special preparation called "valve oil" which must be used continually if once begun. Clean the valves with ammonia occasionally.

CORRECT POSITION

POSITION AND BREATHING

When practicing at home look in the mirror often and see that your position is exactly like the picture in the "Students' Book" and that you breathe properly, chest high and still, abdominal and lower rib muscles doing all the work.

TUNING

Tune B flat (open) with B flat on the pitch-pipe or piano, sliding the tuning slide in or out until the tone matches. The tuba tone will sound two octaves lower than that of the pitch-pipe.

Fingering Chart for Tuba

Fingering above the notes is for BB♭ Tuba
Fingering below the notes is for E♭ Tuba.

1. The figures under the notes indicate which valves or pistons to use, the first valve or piston being the one nearest the mouthpiece.

2. The fingering in brackets is optional and may be used in cases where it is easier, providing it is "in tune."

3. Players using instruments with 4 valves may use the 4th valve instead of the 1st and 3d if they choose. ($\frac{1}{3} = 4$)

PERCUSSION

CARE OF INSTRUMENTS*

SNARE DRUM: The heads should be tightened evenly so that the tension of each head is equal throughout its surface. Tighten opposite sides first, then points midway on either side, etc. The snares should be adjusted to equal tension and tightened sufficiently to respond to the vibrations of the head. Dampness causes the heads to expand or become loose while dryness produces the opposite effect, so it is necessary to tighten the drum more in damp weather. The heads should be loosened after using, especially when used in damp weather as the cause of most breakage is placing a tight drum in a dry place where the heads shrink as they dry out and eventually split.

BASS DRUM: Same as snare drum except the reference to snares.

TIMPANI: Same as bass drum.

*NOTE:—See teachers book §25, pg. 210, for putting on new heads, re-lapping, etc.

POSITION OF PLAYER

SNARE DRUM: Standing or sitting, the drum should be placed in a tipped position at about the level of the hips of the player. The right stick is held with the hand, palm down, and with a grip of the little finger round the stick and the other fingers barely touching the stick. The little finger should grip the stick at a point about three inches from its larger end. The left stick is held between the thumb and forefinger, palm up. The first and second fingers passing under the stick and the other two fingers over the stick. The first finger is curved around the stick and is used to press the stick while the third finger is used to raise the stick after striking. The left thumb crosses the stick at a point about three inches from its larger end. See Figure 1. The roll is made by tapping twice with each stick alternately. Begin very slowly and gradually increase the speed until it sounds like a sustained tone, allowing each stick to rebound so it strikes the head twice with each movement of the hand. Strike the drum near the edge when playing softly and near the center when playing loudly.

Figure 1

CORRECT POSITION

Figure 2

CORRECT POSITION

BASS DRUM: The bass drum should be held or placed on a stand so that the player, always standing, may strike the drum without bending forward. A stick provided with a loop for the hand is conducive to less fatigue in playing, especially on the march. The drum should be struck with glancing blows at a point about one-third of the distance across the head. See Figure 2. The bass drum roll is made by holding the stick by the middle and swinging the wrist so that the ends of the stick strike the drum alternately. A stick with two heads is preferable for this. See Figure 3.

Figure 3

BASS DRUM

BASS DRUM

CORRECT POSITION

TIMPANI: The drums should be elevated to a point where the extended hands of the player, always standing, are on a level with the hoops of the drums which are tipped slightly towards the player for convenience. The sticks are held loosely between the thumbs and forefingers, thumbs upwards, the ends of the sticks reaching only to the outer edges of the palms. See Figure 4. The timpani roll is made with single strokes, each stick striking once instead of twice as described for the snare drum. The player may also practice the double-stroke roll, or snare drum roll, for relief from fatigue in long rolls. The drums should be struck at a point about one-fifth of the distance across the heads as a general rule, though special effects may be procured by striking at other points. A roll starting *pp* and ending *ff* should be started very near the edge and ended near the center of the drum and the sticks are raised higher as more volume is desired. Players should ascertain which portion of the head produces the purest tone and use that portion of the head in playing.

Figure 4

CORRECT POSITION

Figure 5

CORRECT POSITION

CYMBALS: The cymbals are held by straps passed through the aperture and knotted inside the concave center. They are played by striking glancing blows against each other in a swinging motion. See Figure 5. The cymbal roll may be made by suspending one cymbal by a cord and playing with timpani or drumsticks according to the effect desired, or the cymbals may be held about three inches apart in parallel positions while another player shakes a drumstick between the disks. See Figure 6.

Figure 6

CYMBALS

CYMBALS

CORRECT POSITION

Figure 7

TAMBOURINE: There are several ways to play this instrument; shaking in mid-air; tapping with the fingers or on the knee of the player; placing on a pillow and playing with drumsticks, etc. The roll is usually made by holding the tambourine in a horizontal position with the left hand and rubbing with the moistened tip of the right thumb. See Figure 7. More complete instructions will be found in the notes accompanying the exercises in this book.

CORRECT POSITION

Figure 8

CORRECT POSITION

TRIANGLE: The triangle is suspended by a cord (not metal) and is struck with a steel bar. See Figure 8. The roll is played by shaking the beater rapidly from side to side near one corner of the triangle.

Figure 9

CORRECT POSITION

XYLOPHONE AND ORCHESTRA BELLS: The instrument should be elevated to the same height as the timpani; player standing. The hammers are held in a way similar to timpani sticks. Otherwise these instruments are played like the piano, as regards the position of the keyboard, crossing hands, etc. The single stroke or timpani roll is used. See Figure 9.

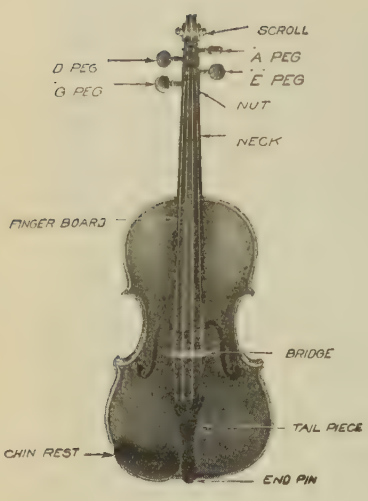
TUNING

SNARE DRUM: "Tuning" a snare drum consists in adjusting the tension of the heads to the point where the desired "snap" results when the drum is struck. Much of this snap is caused by the snares rebounding when the opposite or beater head is struck and it will be found that this rebound is more effective at a certain tension of both heads. Be careful to tighten the heads evenly as specified above.

TIMPANI: Tune the drum around the edges by tapping with one finger of the left hand while turning the screws with the right. When the edges are in tune the entire drum will be in tune and the tone will be clear. Dampening the heads with a wet sponge occasionally will revive the tone when it becomes "dead." Pedal or machine timpani are usually tuned as follows: Tune the small drum to B flat and the large drum to low F with both pedals set at minimum tension.

Note:—Tambourine heads may be tightened by wetting and drying thoroughly.

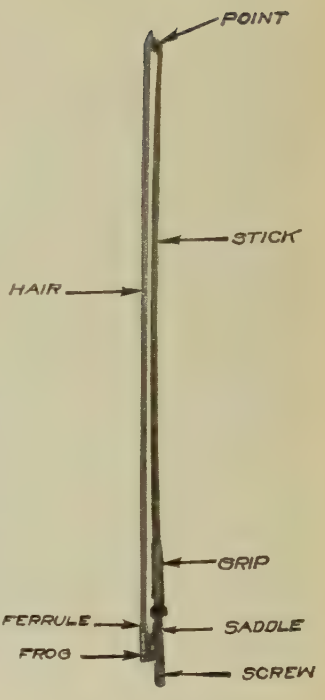
VIOLIN



VIOLIN

EQUIPMENT

Violin. Bow with grip. Rosin. Chin-rest. Music stand. Shoulder-pad (Poehland or equivalent). Wire E string with patent tuning attachment. Gut A and D strings. Covered gut G string (silver preferred). Becker non-slip pegs. If there is no piano in the house, a pitch-pipe is necessary. An extra set of strings and an extra fitted bridge.



VIOLIN BOW

CARE OF INSTRUMENT

Keep the violin in its case when not using it. Do not leave it in a hot or damp place. It will crack or come unglued. Do not loosen the strings when putting away. Loosen the bow-hair when not using. Do not touch bow-hair with the fingers, it will become greasy and the rosin will not stick. If it does get greasy, wash it with soap and water after loosening the hair but be careful not to remove the frog from the stick. Rinse thoroughly and dry before applying rosin. Do not tighten the hair too tightly. The hair should touch the stick when playing loudly. Rosin the hair before each practice. Most pupils use too little rosin.

BOW HAND POSITION

To put on a new string. Tie a knot in one end; slip this knot through the slit in the tail-piece; run the other end of the string through the hole in the peg; draw it tight; pass the end of the string under the string in front of the peg and wrap the end once around the string so that when the peg is turned the end of the string will be drawn under the main part of the string; then it will not slip. Be sure the string is taut before beginning to turn the peg. Too much slack will fill the peg-box or bind against the sides, causing the peg to stick.

Front View

Back View

CORRECT POSITION FOR HOLDING THE VIOLIN

POSITION

When practicing at home, look at yourself in the mirror often to make sure your position is exactly like the picture in the "Students' Book." Look very closely at your two thumbs. They are very likely to be wrong. Watch closely and see that the bow goes at right angles across the string. If it does not the tone will be squeaky. To do this the right wrist must bend.

TUNING

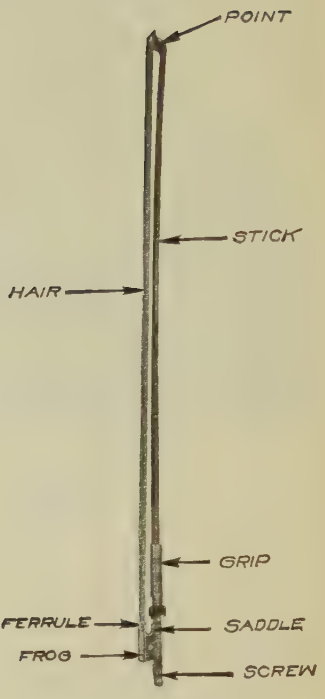
Keep your violin in tune. Always tune it carefully before you practice at home.

Sound A on the piano or pitch-pipe; sing it, holding the tone steadily until you have tuned the A string to sound exactly the same as your singing tone does. Rest the larger end of the violin on the knee and turn the pegs with one hand while you pick the strings with the other hand. Call A, Sol, and sing down to Do. Hold the tone and tune the D string to it. Call D, Sol, sing down to Do and tune the G string to this tone. Call A, Do, sing up to Sol and tune the E string to it.

This is the way to tune at first. Later, when you are able to play quite well you will be able to tune your violin as the professional player does.

VIOLA

VIOLA



BOW

BOW HAND POSITION

EQUIPMENT

Viola. Bow with grip. Rosin. Chin-rest. Music stand. Shoulder-pad (Poehland or equivalent). All strings gut with G and C strings wrapped (preferably with silver). Becker non-slip pegs. An extra set of strings and an extra fitted bridge. If there is no piano in the house, a pitch-pipe is necessary for tuning.

CARE OF INSTRUMENT

Keep the viola in its case when not using it. Do not leave the viola in a hot or damp place. It will crack or come unglued. Do not loosen the strings when you stop playing.

Loosen the bow-hair when you stop playing. Do not touch the hair of the bow with your fingers. It will become greasy and the rosin will not stick. If it does get greasy, wash it with soap and water, after loosening the hair but not removing the frog from the stick. Rinse thoroughly and dry before applying rosin. Do not tighten the hair too tightly. The hair should touch the stick when playing loudly. Rosin the hair before each practice. Most pupils use too little rosin.

TO PUT ON A NEW STRING

Tie a knot in one end of the string. Slip this knot through the slit in the tail-piece. Run the other end of the string through the hole in the peg. Draw it tight. Pass the end of the string under the string in front of the peg and wrap the end of the string once around the string so that when the peg is turned the end of the string will be drawn under the main part of the string; then it will not slip.

Be sure the string is taut before beginning to turn the peg. Too much slack will fill the peg-box or bind against the sides, causing the peg to stick.

TUNING

Keep your viola in tune. Always tune it carefully before you practice at home.

Sound A on the piano or pitch-pipe. Sing it, holding the tone steadily until you have tuned the A string to sound exactly as your singing tone does. Rest the large end of the viola on your knee and turn the pegs with one hand while you pick the strings with the other. Call A, Sol, and sing down to Do. Hold the tone while you tune the D string to it. Call D, Sol, and sing down to Do. Tune the G string to your vocal tone. Call G, Sol, and sing up to Do and tune the C string an octave below this tone.

This is the way to tune at first. Later when you are able to play quite well you will learn to tune your viola as the professional player does.

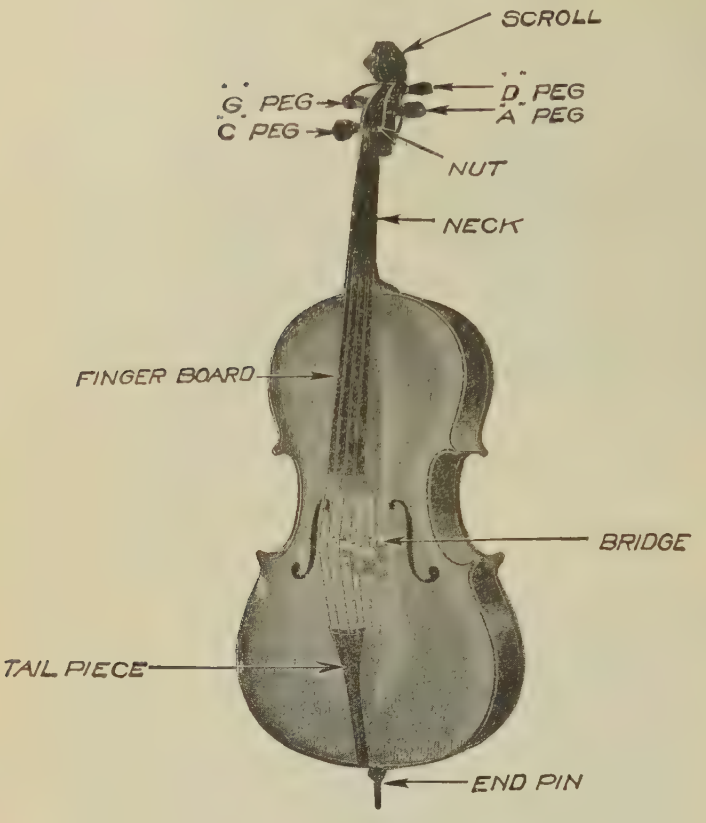
Front View
CORRECT POSITION

Back View
CORRECT POSITION

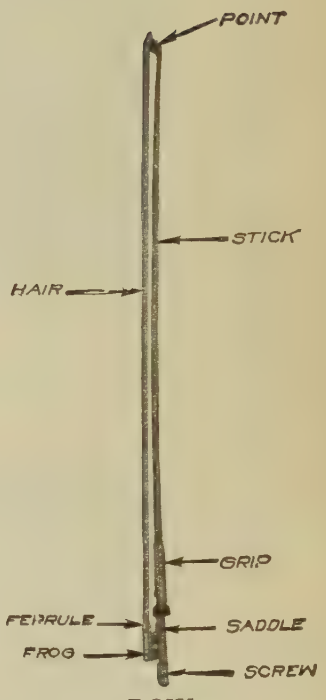
POSITION

The pictures in the "Students' Book" were made through a mirror so you can tell exactly if your position is right by looking at yourself in the mirror and comparing your position with pictures. Always face a mirror when practicing at home and test your position often. Look very carefully at your two thumbs. They are very likely to be wrong. Watch closely and see that the bow goes at right angles across the strings. If it does not the tone will be squeaky. To do this the right wrist must bend.

VIOLONCELLO OR 'CELLO



'CELLO



BOW

BOW POSITION

EQUIPMENT

'Cello. Bow with grip. Rosin. Music stand. All gut strings, G and C strings wrapped (silver preferred). Becker non-slip pegs. An extra set of strings. If there is no piano in the house a pitch-pipe is necessary for tuning.

CARE OF INSTRUMENT

Keep the 'cello in its case or bag when not in use. Do not leave it in a hot or damp place. It will crack or come unglued. Do not loosen the strings when through playing. Loosen the bow-hair when not using. Do not touch the bow-hair with your fingers. It will become greasy and the rosin will not stick. If it does get greasy, wash it with soap and water, after loosening the hair but not removing the frog from the stick. Rinse thoroughly and dry before applying rosin. Do not tighten the hair too tightly. The hair should touch the stick when playing loudly. Rosin the hair before each practice. Most pupils use too little rosin.

TO PUT ON A NEW STRING

Tie a knot in one end. Slip this knot through the slit in the tail-piece. Run the other end of the string through the hole in the peg. Draw it tight. Pass the end of the string under the string in front of the peg and wrap the end once around the string so that when the peg is turned the end of the string will be drawn under the main part of the string; then it will not slip. Be sure the string is taut before beginning to turn the peg. Too much slack will fill the peg-box or bind against the sides, causing the peg to stick.

Right View
CORRECT POSITION

Left View
CORRECT POSITION

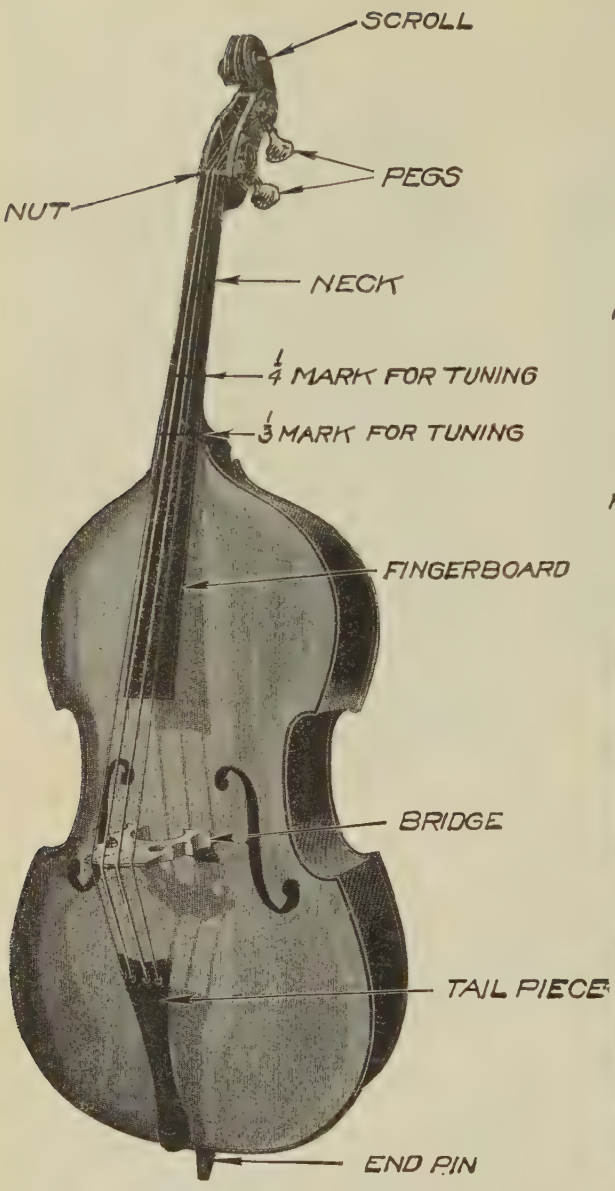
POSITION

When practicing at home, look at yourself in the mirror often and see that your position is exactly like the picture in the "Students' Book." Look very closely at your thumbs. They are likely to be wrong. Watch closely and see that the bow goes across the strings at right angles. If it does not the tone will be squeaky. To do this the right wrist must bend.

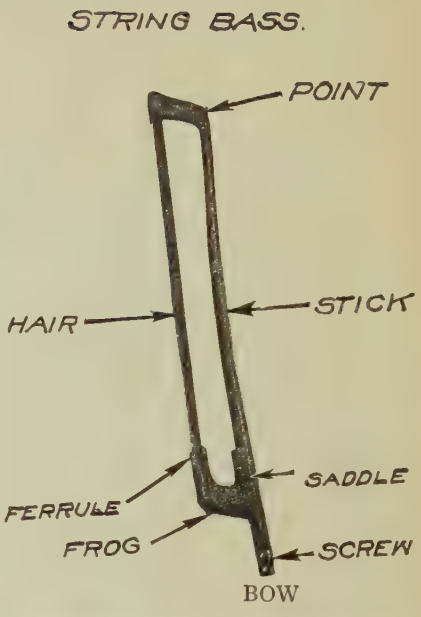
TUNING

Keep your 'cello in tune. Always tune it carefully before you practice at home. Sound A on the piano or pitch-pipe. Sing it, holding the tone steadily while you tune the A string to sound an octave below your voice. If you are a boy with a changed voice you will be able to sing the tone exactly as the 'cello does. Call A, Sol, sing down to Do and tune the D string an octave below the tone you are holding with your voice. If changed voice it will be the same tone. Call D, Sol, sing down to Do and tune the G string to this tone or an octave below it according to your voice. Call G, Sol, sing up to Do. If your voice is changed tune the C string one octave below your singing tone. If unchanged two octaves below. Pick the strings with one hand while you turn the pegs with the other. This is the way to tune at first. Later when you can play quite well, you will be able to tune your 'cello as the professional player does.

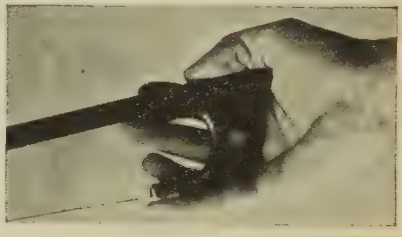
BASS



BASS



BOW



BOW HAND POSITIONS

EQUIPMENT

Bass. Bow. Rosin. Music stand. All gut strings, A and E strings wrapped. If there is no piano in the house a pitch-pipe is necessary for tuning. An extra set of strings.

CARE OF INSTRUMENT

Keep the bass in its bag when not in use. Do not leave it in a hot or damp place. It will crack or come unglued. If it does it should be repaired at once or the wood will warp and repairing will be difficult or impossible. Do not loosen the strings when through playing. Loosen the bow-hair when not using. Do not touch the bow-hair with your fingers. It will become greasy and the rosin will not stick. If it does get greasy, wash it with soap and water, after loosening the hair but not removing the frog

from the stick. Rinse thoroughly and dry before applying rosin. Do not tighten the hair too tightly. Remember how tightly your teacher showed you to keep the hair when playing. Rosin the hair before each practice. Most pupils use too little rosin.

TO PUT ON A NEW STRING

Tie a knot in one end. Slip this knot through the slit in the tail-piece. Run the other end of the string through the hole in the peg. Draw it tight. Pass the end of the string under the string in front of the peg and wrap the end of the string once around the string so that when the peg is turned the end of the string will be drawn under the main part of the string, then it will not slip. Be sure the string is taut before beginning to turn the peg. Too much slack will fill the peg-box or bind against the sides, causing the pegs to stick.

Left View
CORRECT POSITION

Right View
CORRECT POSITION

POSITION

When practicing at home, look at yourself in the mirror often to make sure your position is exactly like the picture in the "Students' Book." Look very closely at your thumbs. They are very likely to be wrong.

TUNING

Keep your bass in tune. Always tune it carefully before you practice at home. Sound A on the piano or pitch-pipe. Sing the tone and touch the A string lightly with the little finger at the highest mark (one-fourth) which your teacher has helped you to make on the fingerboard; sound the tone with the bow and tune this tone (harmonic) to an octave below the tone you are singing. Then call A, Sol, and sing down to Do. Touch the D string at the same (upper) mark and tune the D string to the tone you are singing. Then call D, Sol, and sing up to Do and tune the G string in the same manner. Then sound the first tone (with the little finger on the upper mark on the A string). Call that Do and sing up to Sol. Tune the E string in the above manner, one octave lower than the voice.

This is the way to tune the bass at first. Later when you are able to play quite well you will learn to tune as the professional player does.

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